ATTACHMENT D

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

PLANNING, RULE DEVELOPMENT, AND AREA SOURCES

FINAL

PM10 REDESIGNATION REQUEST AND MAINTENANCE PLAN FOR THE COACHELLA VALLEY

December, 2009

South Coast Air Quality Management District

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1.0 PURPOSE

The Coachella Valley is currently designated as a serious nonattainment area for 24-hour average PM10. Under the Federal Clean Air Act (CAA), an area can be redesignated as attainment if, among other requirements, the U.S. Environmental Protection Agency (U.S. EPA) determines that the national ambient air quality standards (NAAQS) have been attained. The NAAQS allows for one exceedance of the 24-hour average PM10 standard per year averaged over a three consecutive calendar year period, excluding natural/exceptional events, measured at each monitoring site within an area based on quality assured Federal Reference Method (FRM) air quality monitoring data.

The Coachella Valley has not violated the federal 24-hour PM10 standard (150 $\mu g/m^3$) during the period including 1998 through 2007. Figure 1-1 depicts the trend of Coachella Valley maximum 24-hour average concentrations, excluding exceptional events, for the period 1998 through 2008. (The 2008 PM10 24-hour maximum concentration is preliminary pending certification). Since 1998, elevated PM10 events associated with high wind driven dust storms, thunderstorm micro-bursts and wildfires have been flagged, documented and excluded from NAAQS determination under U.S. EPA's Exceptional Events regulation (40 CFR 50.14) and preceding Natural Event Policy. (Note: Only PM10 concentrations exceeding 150 $\mu g/m^3$ were excluded under the policy. As a result, elevated PM10 concentrations less than 150 $\mu g/m^3$ associated with exceptional events were retained in the archives without a flag. Such is the case on April 12, 2007 when the 24-hour average PM10 concentration at Indio reached 146 $\mu g/m^3$ under high wind conditions but was not flagged because of the policy. The second highest concentration measured at Indio in 2007 was 110 $\mu g/m^3$). Analysis of the monitoring data indicates that the Coachella Valley has not violated the 24-hour PM10 standard in 2008. Per the criteria specified in the NAAQS, the Coachella Valley has been in compliance with the 24-hour PM10 standard from 2000 (based on 1998-2000 data) and has maintained compliance since. More specifically, this redesignation request is based on the last complete three-year period of PM10 monitoring data including 2005, 2006 and 2007. Accordingly, the purpose of this document is to revise the previous PM10 State Implementation Plans (SIP) to request redesignation of the Coachella Valley to attainment for PM10 and to submit the attendant maintenance plan and other required actions to qualify for such redesignation by U.S. EPA.

The draft version of this document was made available for public review and comment on October 30, 2009. The South Coast Air Quality Management District (District) coordinated with other agencies for input and additional comments and has made changes in response to the comments in the final PM10 redesignation request and proposed maintenance plan, accordingly. As part of the public process, regional Public Hearings were held in each of the four counties in the District jurisdiction during the week of December 15-18, 2009.

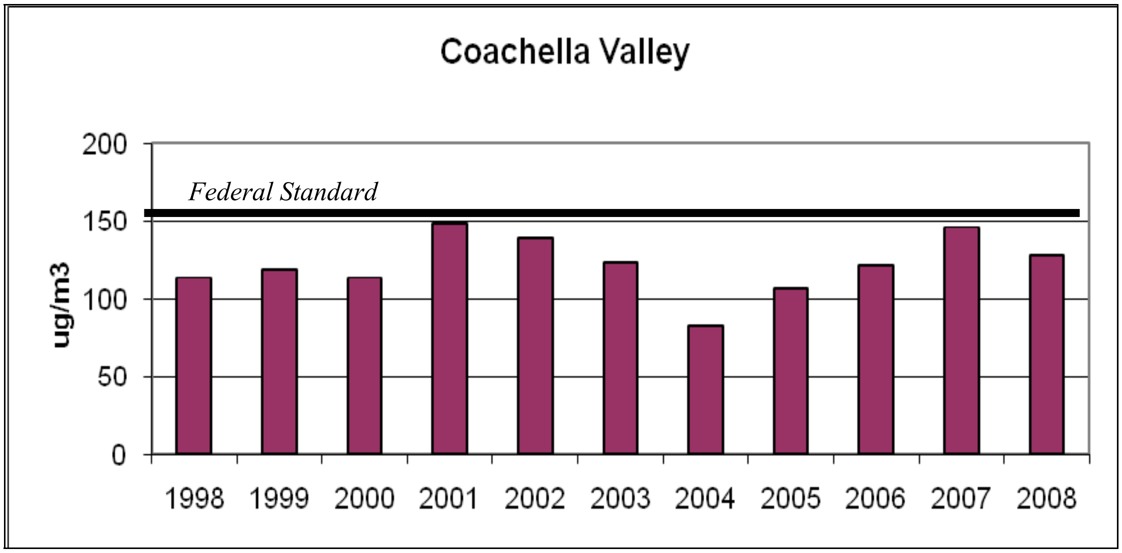


FIGURE 1-1

Coachella Valley Maximum 24-hour Average PM10 Concentration (1998-2008)
Excluding Exceptional Events Greater than 150 $\mu g/m^3$

2.0 REDESIGNATION REQUEST

The District is requesting redesignation of the Coachella Valley from serious nonattainment to attainment of the PM10 NAAQS under CAA Section 107 (d)(3)(E) protocol.

Section 107 (d)(3)(E) of the CAA requires the U.S. EPA administrator to make five findings prior to granting a request for redesignation:

1. The U.S. EPA has determined that the NAAQS have been attained.
2. The applicable implementation plan has been fully approved by U.S. EPA under section 110(k).
3. The U.S. EPA has determined that the improvement in air quality is due to permanent and enforceable reductions in emissions.
4. The State has met all applicable requirements for the area under Section 110 and Part D.
5. The U.S. EPA has fully approved a maintenance plan, including a contingency plan, for the area under Section 175A.

As described in the previous section of this document, PM10 air quality in the Coachella Valley, excluding exceptional events, has not violated the NAAQS for the past decade. Section 2.1.1 provides the confirmation that the 2005-2007 PM10 FRM air quality in the Coachella Valley is certified (see Attachment 1), has met quality assurance requirements, and has attained the NAAQS. The section offers a supplemental discussion of the three years annual meteorological profiles with reference to long-term climatic mean conditions as well trends in vehicle miles traveled to further characterize PM10 air quality in light of weather variability and regional growth. Section 2.1.2 presents the 2005-2007 Coachella Valley PM10 air quality based on "real-time" Beta Attenuation Monitor (BAM) data. The two Coachella Valley BAMs are not designated as federal equivalent monitors (FEM) and as such, the data acquired from the samplers is not used as the basis of the attainment demonstration. The data, however, does support the FRM NAAQS attainment finding. Furthermore, the BAMs will provide daily PM10 sampling to support the monitoring requirements specified in the maintenance plan presented in Sections 3.2 and 3.3. Combined, these analyses satisfy finding number 1 of CAA Section 107.

It is important to note that the District has been routinely monitoring PM10 in the Coachella Valley since 1985. This attainment demonstration is based on data measured at two long-established monitoring sites, Indio and Palm Springs that represent the regional exposure to PM10. Beginning in 2007, the Torres-Martinez

Tribal Nation established a real-time BAM monitoring site on an unpaved dirt lot with no vegetative ground cover that serves as an access road and parking lot for their Tribal Community Center located in the southern portion of the Coachella Valley. The District has no jurisdiction in the Tribal Nation and did not participate in the selection of the monitoring site. U.S. EPA monitoring requirements specified in CFR Part 58 Appendix E, Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring, Section (3), paragraph (a), Spacing From Minor Sources, specifically states that "Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of wind blown dusts will be kept to a minimum." The placement of the Torres-Martinez real-time BAM monitoring site on an unpaved dirt lot with no vegetative ground cover directly conflicts with 40 CFR 58, Appendix E criteria.

Analysis of the 2007 Torres-Martinez BAM hourly data shows an overwhelming mobile-source re-entrained unpaved road dust impact from daily travel to the community center over the unpaved roads and unpaved parking lots adjacent to the monitoring site (within a 100 meter radius extending from the monitor). District staff has reviewed the monitor siting and contends that the monitoring location is solely representative of a localized microscale PM10 exposure and as such, the data from the site should not be included in the regional attainment assessment.

The District has not participated in the operation or maintenance of the Torres-Martinez PM10 monitoring equipment. While the tribal authority worked closely with U.S. EPA to establish the site, including an initial audit of the monitoring equipment, preliminary data from the monitoring site was only acquired for roughly two thirds of 2007. BAM PM10 monitoring failed to meet completeness requirements in the first and fourth quarters of the year. The monitor was taken off-line for maintenance and repairs beginning November of 2007 and continued offline through the end of the year. In addition, after review of the preliminary data concerns exist about the degree of quality assurance applied to the data and the absence of screening for and flagging of exceptional events. (The 2007 Torres-Martinez hourly PM10 data exhibited a significantly higher standard deviation [102 $\mu g/m^3$] compared with the standard deviations of the District's Palm Springs and Indio hourly BAM data [45 and 55 µg/m3, respectively]). Given the conflict with U.S. EPA siting guidance (monitor placement on an unpaved area) and uncertainties associated with the Torres-Martinez PM10 data the District has excluded the 2007 data acquired from the site from the attainment assessment. An extended discussion of the Torres-Martinez data and monitoring site is presented in Attachment 6 of this document.

Sections 2.2 and 2.3 characterize the Coachella Valley PM10 SIP and provide reference to U.S. EPA's approval of the SIP including the rules and local ordinances defining the permanent and enforceable emissions reduction. Sections

2.4 and 2.5 address the applicable requirements under Section 110 Part D and preface the requirements for a maintenance plan. Together these sections directly address and satisfy findings (2, 3, 4 and 5) of CAA Section 107.

The following paragraphs provide the additional information necessary for the U.S. EPA to make the above findings.

2.1 Attainment of the Standard

According to U.S. EPA guidance, the demonstration of attainment with the PM10 standard must rely on three complete, consecutive calendar years of quality-assured air quality monitoring data collected in accordance with 40 CFR 50, Appendix J. The NAAQS allows for one exceedance of the 24-hour PM10 standard per year averaged over a three consecutive calendar year period.

2.1.1 Monitoring Network and Data Certification

The District operates two air quality monitoring stations in the Coachella Valley (Palm Spring and Indio) where PM10 is monitored in accordance with 40 CFR 50, Appendix J. The two stations are components of the twenty one station PM10 District monitoring network that is designed to meet the program requirements of National Air Monitoring Stations (NAMS) and State and Local Air Monitoring Stations (SLAMS) and to provide special monitoring in support of air quality research and health studies. PM10 monitoring is conducted at each station using FRM high volume filter samplers with a size selective inlet. Each station is designated on the basis of the major program requirements as well as the monitoring objective and the representative spatial scale of sampling. Table 2-1 lists the air monitoring stations that sample PM10 in the Coachella Valley and provides the U.S. EPA Air Quality System (AQS), and CARB identification numbers, the District identification code, as well as the equipment designation, monitoring objectives and monitoring scales. The PM10 monitoring data are subjected to validation and are submitted to ARB and U.S. EPA for inclusion in the AQS data base.

As required by Federal Regulations (40 CFR Part 58), the District conducts an annual review of the air quality monitoring network that is forwarded to CARB and U.S. EPA for evaluation. In addition, the District provides U.S. EPA annually certification that the data has been monitored and validated in accordance with Federal Regulations and that they are complete and accurate. Certification letters to U.S. EPA for the 2005-2007 monitoring years are provided as Attachment-1 to this document.

2.1.2 Certified Ambient PM10 Air Quality: 2005 - 2007

Table 2-2 provides a summary of the certified FRM ambient PM10 data measured in the Coachella Valley by the District for the period including 2005 through 2007. Listed for each station are the number of days of valid data, the annual maximum 24-hour average concentration, the annual number of days exceeding the federal standard and the consecutive three-year total number of days exceeding the standard for the 2005–2007 time period. During the three year period (2005-2007), the PM10 24-hour standard was not exceeded in the Coachella Valley. The Indio station measured the highest PM10 concentrations in the Coachella Valley in each of the three years. The annual maximum concentrations measured at Indio were 106, 122 and 146 $\mu g/m^3$ for 2005, 2006 and 2007, respectively. Data measured on three days [July 16, 2006 at Palm Springs (226 $\mu g/m^3$) and Indio (313 $\mu g/m^3$), 2007: March 22, 2007 (210 $\mu g/m^3$) at Indio and April 6, 2007 (157 $\mu g/m^3$) at Indio], were flagged as exceptional events and excluded from the annual evaluation. (A comprehensive discussion of the mechanisms that generate exceptional events and the impacts to the Coachella Valley are presented in Attachment 3 of this document).

The Indio site is located at the southern portion of the Coachella Valley in a mixed agricultural-residential portion of the valley. The Indio monitor is located adjacent to open fields and is subject to PM10 transport in the late afternoon/early evening from the Basin. The site experiences its peak impacts during high wind events where blowsand originating in protected environmental preserve areas is fractured and suspended throughout the valley. These days are typically flagged as natural or exceptional events. Peak values of PM10 in the Coachella valley occur in the spring and early summer in response to migratory weather systems moving through Southern California (frontal systems, cold air advection and thunderstorms). Quarterly and annual average wind and total rainfall together can be useful indicators of annual PM10 potential.

The impact of rainfall to Coachella Valley PM10 is complex in that higher winter rainfall in the adjacent mountains leads to increased springtime runoff and potential accumulations of blowsand in the northern portion of the valley. Wind events associated with the migratory weather systems entrains the blow-sand and transports the dust throughout the valley. The quarterly rainfall totals measured at Downtown Los Angeles are good estimators of the potential for rainfall/snow melt run-off and with it soil erosion from the San Jacinto and San Bernardino Mountains towards the Whitewater River wash and the Coachella Valley Preserve, a natural blowsand source area. Figure 2-1 provides the Downtown Los Angeles quarterly rainfall totals for 2005-2007 and the average for the 20 preceding years (1985-2004). Rainfall totals for the 2005-2007 winter and spring quarters were higher than the 20-year average providing a mechanism for potentially increasing valley blowsand. In addition, winds at Thermal Airport (located 5 miles from the Indio monitor) averaged about 5 percent higher in the spring and summer quarters for the 2005-2007 period compared to the 1985-2004 quarterly averages (see Figure 2-2). The combination of increased blowsand generation potential and higher winds indicates that the Coachella Valley experienced above average capacity for higher PM10 concentrations during 2005-2007 compared to the long term average. Nevertheless, the PM10 24-hour standard was not violated in the Coachella Valley during the 2005-2007 period with the exclusion of natural events.

Daily vehicle miles traveled (VMT) for all vehicles in the Coachella Valley based on the California Air Resources Board EMFAC2007 vehicle emissions model held relatively constant from 2005 through 2007 at approximately 10.9 million miles. The relatively constant VMT reported for the 2005-2007 in the Coachella Valley suggests that direct particulate emissions from vehicle exhaust and usage as well as particulate entrainment from transit (on both paved and unpaved roads) should not have significantly varied from year to year

Based on the criteria specified in the CAA (which allows for one violation at one location per year on average in three consecutive years) the Coachella Valley attained the standard in 2000 and has maintained attainment through 2007.

2.1.3 PM10 Air Quality From District Operated Continuous Beta Attenuation Monitors (BAM) in the Coachella Valley

As previously stated in section 2.0 the District has operated a network of continuous "real-time" PM10 Beta Attenuation Monitors (BAM) in the Coachella Valley in excess of a decade. The instruments are co-located with the FRM monitors at the Indio and Palm Springs monitoring stations. The primary functions of the BAMs are to measure real-time PM10 concentrations to inform the public and for the issuance of health based PM10 dust advisories. The BAM data are a critical component of the daily high wind forecast issued to the Coachella Valley that initiates short-term curtailment actions to reduce dust emissions under District Rule 403.1. The data acquired from the BAM network also provides supporting documentations of exceptional PM10 events and assists in the characterization of the long-term trends of air quality in the Coachella Valley.

TABLE 2-1

Air Quality Monitoring Network Review Summary

Monitoring Location	AQS Station No.	ARB Station No.	SCAQMD Site Code	Equipment Designation	Objective*	Spatial Scale**
Palm Springs	060655001	33137	PLSP	SLAMS	RC	NS
Indio	060652002	33157	INDI	SLAMS	HC	NS

* RC - Representative Concentrations, HC - High Concentrations
** MI - Microscale, MI - Middle Scale, NS - Neighborhood Scale

TABLE 2-2

Salton Sea Air Basin/Coachella Valley Certified PM10: 2005-2007

Monitoring Location	Maximum 24-Hour Average Concentration ($\mu g/m^3$)			Number of Samples			Number of Days Exceeding Federal 24-Hour Average Standard (≥ 150 $\mu g/m^3$)			Three-Year Total Number of Days Exceeding the Standard
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005-2007
Palm Springs	66	73	83	59	57	54	0	0	0	0
Indio	106	122	146	115	115	84	0	0	0	0

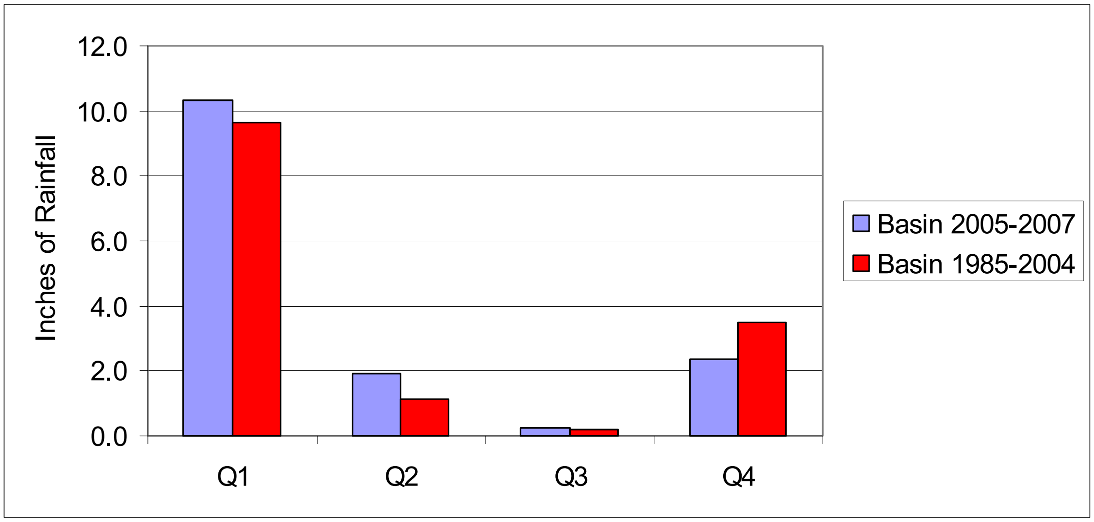


FIGURE 2-1

Quarterly Average Basin Rainfall Measured at Downtown Los Angeles

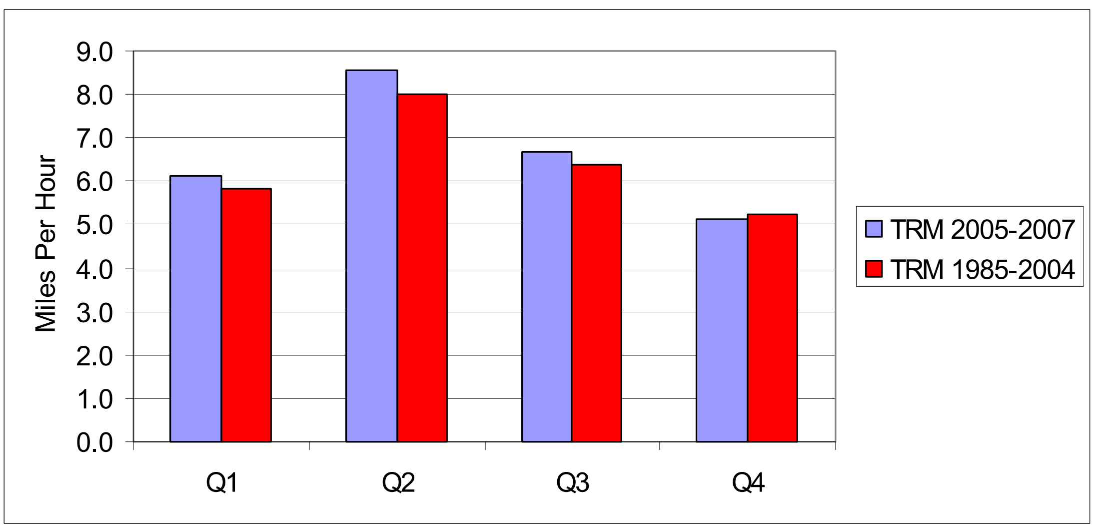


FIGURE 2-2

Quarterly Average Wind Speed Measured at Thermal Airport

The purpose of including a discussion of the BAM data for the 2005-2007 three-year period in this redesignation request is twofold: first, to provide supplemental confirmation of the attainment assessment based on the FRM data. Second, the Clean Air Act requires that enhanced monitoring be conducted at the location of the PM10 maximum concentration in the Coachella Valley upon redesignation. The analysis provides confidence that the BAM monitors can reliably be used to meet the enhanced monitoring requirements for future PM10 compliance determination to the federal and California PM10 standards when redesignation to attainment is approved.

While the BAM monitoring instruments are routinely calibrated, subjected to flow checks and are subject to an annual audit, extensive screening of the hourly data is not rigorously performed on a continuous basis. As a consequence, isolated hourly concentrations reading zero or depicting substantial shifts in concentration -- "spikes" from one hour to the following hour are not flagged or extracted from the data stream. For this supporting analysis, two cursory data screening tests were applied to each BAM hourly data set: First, all hours having zero concentration were set to missing and excluded from the 24-hour average calculation. Second, the 3-year standard deviation of the hourly data was calculated (all hours), then multiplied by a factor of six to provide an extreme benchmark to compare spikes in consecutive hourly data values. If the change between hours exceeded 6 standard deviations then the latest hour was excluded from the analysis. This analysis mainly targets extreme random fluctuations in the 24-hour PM10 profile rather than high wind events characterized by multiple successive hours of elevated concentrations. The standard deviation of the 2005-2007 hourly BAM PM10 data calculated for Palm Springs valued 45.0 $\mu g/m^3$ and the 6-standard deviation benchmark was set at 270 $\mu g/m^3$. For Indio, the standard deviation of the 2005-2007 hourly BAM PM10 data was calculated to be 47.2 $\mu g/m^3$ and the 6-standard deviation benchmark was set at 283 $\mu g/m^3$. A valid daily 24-hour average concentration required 18 hours of data (75 percent rule) to be included in the assessment.

Figures 2-3 and 2-4 depict the trends of 24-hour average concentrations for PM10 at Indio and Palm Springs respectively for the period including January 1, 2005 through December 31, 2007 based on BAM data. Concentrations exceeded 150 $\mu g/m^3$ on two days each at the monitoring locations (with one coincidental date). While not screened for potential exclusion as exceptional events, a preliminary scan of the NOAA Coachella Valley climatological daily summary data for Palm Spring Airport and Thermal Airport indicates that three of the 24-hour averages would be candidates for exceptional event exclusion. Table 2-3 summarizes the exercise if U.S. EPA's criteria for calculating the expected number of days that would exceed the 24-hour standard were applied to the BAM data.

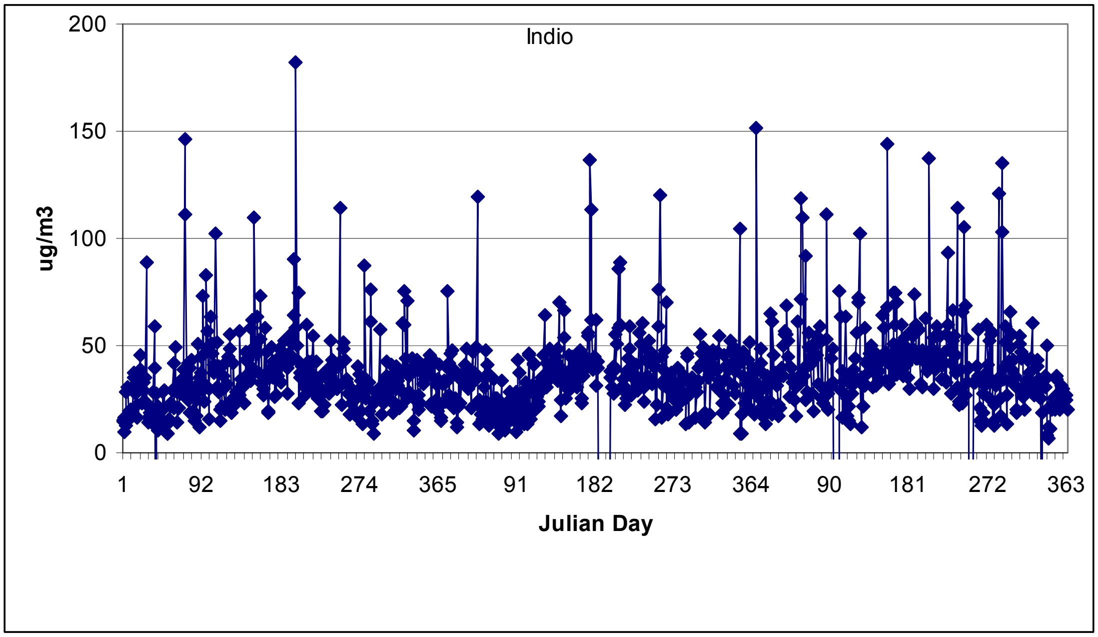


FIGURE 2-3

Indio District BAM 24-Hour Average Continuous PM10 Concentrations (2005-2007)

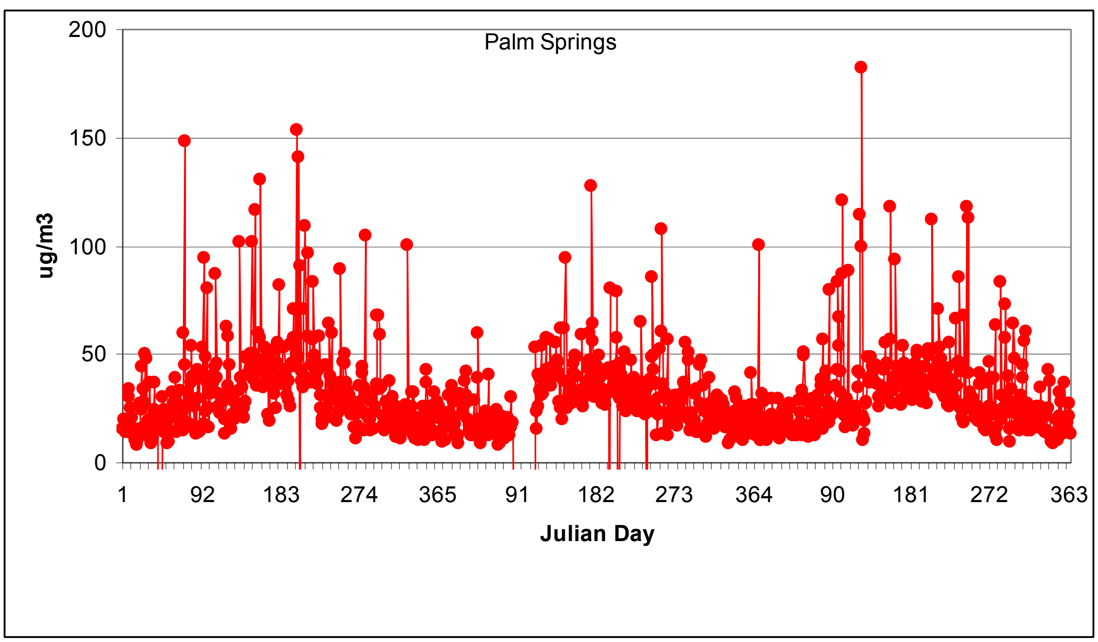


FIGURE 2-4

Palm Springs District BAM 24-Hour Average Continuous PM10 Concentrations (2005-2007)

TABLE 2-3

Summary of District PM10 BAM Continuous Monitoring Data*

Indio							
Year	Quarter	Days Complete Data	Normal	No. Days > 150 µg/m3	Expected Exceedances	No. Exceptional Events	Expected Exceedances Excluding Exceptional Events
2005	1	89	90	0	0	0	0
	2	91	91	0	0	0	0
	3	92	92	1	1.00	0	1.00
	4	92	92	0	0	0	0
2006	1	90	90	0	0	0	0
	2	91	91	0	0	0	0
	3	79	92	0	0	0	0
	4	92	92	0	0	0	0
2007	1	90	90	1	1.00	1	0
	2	85	91	0	0	0	0
	3	87	92	0	0	0	0
	4	91	92	0	0	0	0
Total					2.00		1.00
3-Year Average					0.67		0.33
Palm Springs							
Year	Quarter	Days Complete Data	Normal	No. Days > 150 µg/m3	Expected Exceedances	No. Exceptional	Expected Exceedances Excluding Exceptional Events
2005	1	86	90	0	0	0	0
	2	91	91	0	0	0	0
	3	91	92	1	1.01	0	1.01
	4	92	92	0	0	0	0
2006	1	86	90	0	0	0	0
	2	70	91	0	0	0	0
	3	89	92	0	0	0	0
	4	92	92	0	0	0	0
2007	1	90	90	0	0	0	0
	2	85	91	1	1.07	1	0
	3	92	92	0	0	0	0
	4	92	92	0	0	0	0
Total					2.08		1.01
3-Year Average					0.69		0.33

* Hours with 0 µg/m3 concentration or 6 standard deviations change from preceding hour excluded.

As indicated, without screening for exceptional events, both sites would be projected to have less than one day per year with 24-hour average concentrations exceeding 150 $\mu g/m^3$. If the days identified as exceptional events were excluded the tally would be one day in the three year period for each station. In both cases, the PM10 air quality meets the federal 24-hour PM10 standard. (Preliminary 24-hour average BAM concentrations for 2007 are provided for Indio and Palm Springs in Attachment 3 of this document).

Figure 2-5 provides the 2005-2007 data correlation between the BAM PM10 24-hr average concentrations and the corresponding filter based FRM measurements for Indio (excluding the exceptional event). The correlation coefficient between the two measurement techniques is 0.66 with the BAM exhibiting a tendency for under estimating the upper range of the FRM measurements of the PM10 distribution. Given the instruments are based on fundamentally different technologies and do not share a common intake manifold, the correlation is strong for ambient air quality monitoring.

The results of the BAM data analysis support the FRM data analysis that the Coachella Valley has met the 24-hour average federal standard for the period 2005-2007. Furthermore, the analysis provides confidence that the real-time BAM monitor will be reliable and can meet the requirement for daily PM10 monitoring prescribed by the Clean Air Act.

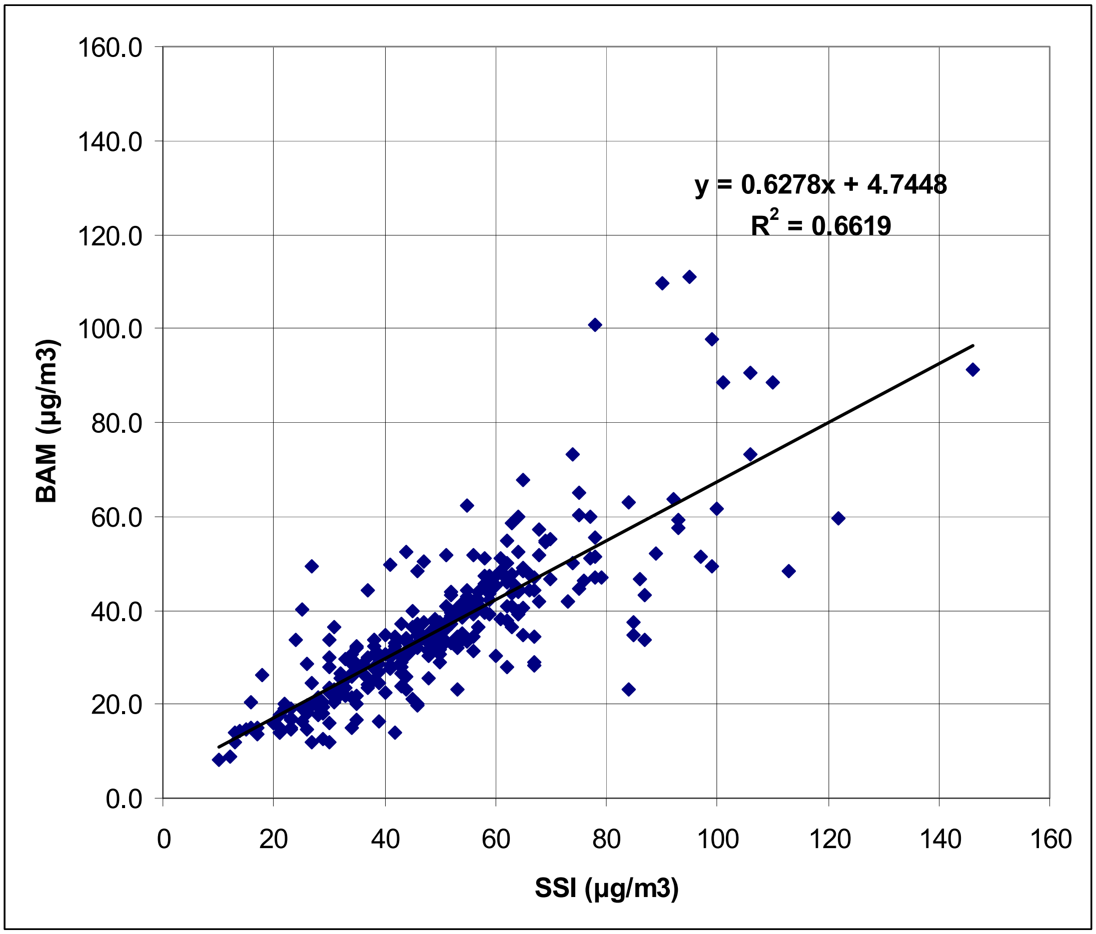


FIGURE 2-5

Comparison of the 2005-2007 24-Hour Average BAM Continuous PM10 Concentrations with the FRM Selective Sized Inlet (SSI) Filter PM10 Measurements (µg/m^3)

2.2 Coachella Valley PM10 State Implementation Plan (CVSIP)

On November 14, 2005, U.S. EPA approved the 2003 revisions to the Coachella Valley PM10 State Implementation Plan (CVSIP) submitted by the State of California to provide for the attainment of the PM10 NAAQS for the Coachella Valley (Federal Register,: November 14, 2005 [Volume 70, Number 218], pp. 69081-69085). Based on this approval, finding number 2 of the CAA Section 107 requirements for an approved implementation plan under CAA Section 110(k) is therefore satisfied.

The Coachella Valley PM10 Plan, first adopted by the SCAQMD Governing Board in November 1990, provided a blueprint for dust control containing measures to address fugitive emissions from paved and unpaved roads, agricultural and construction/demolition activities and open area wind erosion. The CVSIP was subsequently revised in (1) 1994 to include Best Available Control Measures (BACM), (2) 1996 to request attainment redesignation and provide for a PM10 maintenance plan, and (3) 2002 to provide control program enhancements that met the Most Stringent Measure (MSM) requirements and CAA requirements for an extension of the PM10 attainment date to 2006. The 2002 revisions to the CVSIP (adopted by U.S. EPA on April 18, 2003) included enhancements to SCAQMD dust program including proposed revisions to Rules 403, 403.1 and 1186 and locally adopted dust control ordinances however updates to the motor vehicle emissions budgets were not available. The final 2003 CVSIP revision provided the motor vehicle emissions budgets and regional planning assumptions for the purpose of transportation conformity.

The 2007 revisions to the Air Quality Management Plan provided an update to the Coachella Valley emissions inventory, the 8-hour ozone attainment demonstration and ozone transportation conformity budgets. The 2007 AQMP did not address PM10 in the Coachella Valley given the recent 2005 approval of the revised CVSIP and the 2006 revocation of the PM10 annual standard and the decade long record of meeting the 24-hour standard. As such, no revisions were made to the PM10 attainment demonstration or the PM10 motor vehicle emissions budget and the 2003 CVSIP remains as the governing plan for PM10 in the Coachella Valley.

2.3 Permanent and Enforceable Emission Reductions

The Coachella Valley has attained the 24-hour PM10 standard since 2000 despite regional growth and increases in construction activites due to the implementation of the CVSIP and its revisions. The 2003 CVSIP revison projected a 3 ton per day (TPD) reduction in PM10 emissions in 2006 from the 32 TPD baseline PM10 emissions inventory. The projected 9 percent reduction in emissions resulted from strengthening SCAQMD rules and local city and county ordinances focusing on four key emissions categories including construction/demolition. agriculture and paved and upaved road dust. The 3 TPD PM10 emissions reduction in 2006 from the four categories more than offset the projected growth in the baseline Coachella Valley PM10 emissions from the 2000 total of 30 TPD.

The principal SCAQMD fugitive dust BARCT rules in the Coachella Valley are: Rule 403 -- Fugitive Dust, Rule 1186 -- PM10 Emissions from Paved and Unpaved Roads and Livestock Operations, and Rule 403.1 -- Supplemental Fugitive Dust Control Requirements for Coachella Valley Sources. Attainment of the PM-10 NAAQS in Coachella Valley also depends on emission reductions from fugitive dust control ordinances adopted by Riverside County and nine cities within the Coachella Valley. As part of the 2003 CVSIP approval, U.S. EPA approved SCAQMD adopted amendments (April 4, 2002, Governing Board Meeting) strengthening Rules 403, 403.1, and 1186 and more stringent fugitive dust control ordinances adopted by the 10 Coachella Valley jurisdictions. These rules and city and county ordinances were adopted in fulfillment of emission reduction commitments in the 2002 SIPs for the Coachella Valley.

On February 16, 1995, the State of California submitted for SIP approval the following fugitive dust ordinances adopted by the following Coachella Valley jurisdictions on the dates shown in parentheses: City of Cathedral City Ordinance No. 377 (2/18/93), City of Coachella Ordinance No. 715 (10/6/93), City of Desert Hot Springs Ordinance No. 93-2 (5/18/93), City of Indian Wells Ordinance No. 313 (2/4/93), City of Indio Ordinance No. 1138 (3/17/93), City of La Quinta Ordinance No. 219 (12/15/92), City of Palm Desert Ordinance No. 701 (1/14/93), City of Palm Springs Ordinance No. 1439 (4/21/93), City of Rancho Mirage Ordinance No. 575 (8/5/93), and County of Riverside Ordinance No. 742 (1/4/94). On December 9, 1998 (63 FR 67784). U.S. EPA approved all of these ordinances.

The ten local government ordinances were originally based on a model fugitive dust control ordinance developed by the Coachella Valley Association of Governments (CVAG), local governments, and the SCAQMD. The ordinances typically required: (1) dust control plans for each construction project needing a grading permit; (2) plans to pave or chemically treat unpaved surfaces if daily vehicle trips exceed 150; (3) imposition of 15 mph speed limits for unpaved surfaces if daily vehicle trips do not exceed 150; (4) paving or chemical treatment of unpaved parking lots; and (5) actions to discourage use of unimproved property by off-highway vehicles.

As part of its approval of the 2003 CVSIP, U.S. EPA approved enhanced local government ordinances as replacements for the previously approved SIP provisions (Federal Register,: November 14, 2005 [Volume 70, Number 218], pp. 69081-69085). The replacement dust control ordinences were based on a more stringent model ordinance and were adopted by all of the jurisdictions. The revised ordinances improved the effectiveness of controls on construction emissions and enhanced the jurisdictions' various programs for reducing reentrained dust emissions.

The replacement ordinances include: City of Cathedral City Ordinance No. 583 (adopted 1/14/04), City of Coachella Ordinance No. 896 (10/8/03), City of Desert Hot Springs Ordinance No. 2003-16 (10/7/03), City of Indian Wells Ordinance No. 545 (11/6/03), City of Indio Ordinance No. 1357 (12/3/03), City of La Quinta Ordinance No. 391 (12/2/03), City of Palm Desert Ordinance No. 1056 (11/13/03), City of Palm Springs Ordinance No. 1639 (11/5/03), City of Rancho Mirage Ordinances No. 855 (12/18/03) and No. 863 (4/29/04), and County of Riverside Ordinance No. 742.1 (1/13/04) .

The revisions to Rules 403, 403.1, and 1186 and the Coachella Valley fugitive dust ordinances strengthen the SIP-approved rules and ordinances. The rules and ordinances continue to contain adequate enforcement provisions for ensuring compliance by regulated facilities and the rules delivered emission reductions consistent with the Coachella Valley progress and attainment requirements. Prior versions of these rules and ordinances were previously determined to meet the BACM provisions, and the rules and ordinances, as now strengthened, continue to meet applicable CAA subpart 2 provisions.

U.S. EPA, with its approval has concluded that the 2003 CVSIP revisions, local and county dust ordinances continue to meet BACM and MSM control measure requirements under CAA sections 188(e) and 189(b)(1)(B), through fully adopted regulations and ordinances.

2.4 Section 110 and Part D Requirements

CAA section 107(d)(3)(E) requires that U.S. EPA determine that the improvement in air quality is due to permanent and enforceable reductions in emissions resulting from implementation of the SIP and/or applicable federal measures. CAA section 110 contains the general requirements for SIPs and Part D specifies additional requirements applicable to nonattainment areas. Both Section 110 and Part D describe the elements of a SIP and include, among other things, emission inventories, a monitoring network, an air quality analysis, modeling, attainment demonstrations, enforcement mechanisms, and regulations which have been adopted by the State to attain or maintain NAAQS).

In its rulemaking on the 2003 CVSIP, U.S. EPA fully approved the applicable requirements for the Coachella Valley (Federal Register: November 14, 2005 [Volume 70, Number 218], pp. 69081-69085). Thus, the State has met all SIP requirements applicable to the area under section 110 and part D, as required by CAA section 107(d)(3)(E).

2.5 Maintenance Plan

The District is submitting its Coachella Valley PM10 Maintenance Plan (Section 3.0 of this document) concurrently with this redesignation request. The District requests U.S. U.S. EPA to expeditiously review the Plan, and if determined that the Plan meets the provisions of the CAA, approve the maintenance plan as part of the redesignation process.

3.0 COACHELLA VALLEY PM10 MAINTENANCE PLAN

Section 107(d)(3)(E) of the CAA specifies that for an area to be redesignated as attainment, the U.S. EPA must approve a maintenance plan that meets the requirements of Section 175A. The purpose of the maintenance plan is to provide for the maintenance of the 24-hour PM10 NAAQS for at least ten years after the redesignation (not ten years after the redesignation submittal). CAA Section 107 (d)(3)(D) allows the U.S. EPA Administrator up to 18 months from receipt of a complete submittal to process a redesignation request. To accommodate the U.S. EPA's review time and to be consistent with other District planning timelines, the maintenance plan will cover the period beginning U.S. EPA's approval (2010 to 2012) through the following ten years. The maintenance plan requires a maintenance demonstration, commitment to a future monitoring network, verification of continued attainment, a contingency plan, and provisions for contingency plan implementation.

Section 3.0 provides the proposed Coachella Valley PM10 Maintenance Plan. In Section 3.1, the approved 2003 CVSIP attainment inventory and modeling demonstration as well as the transportation conformity budgets are updated to include the latest planning assumptions and baseline emissions inventory used in the 2007 AQMP. The maintenance plan also provides a commitment to maintain a future PM10 monitoring network in the Coachella Valley to verify continued attainment of the NAAQS (Sections 3.2 and 3.3). Finally, Section 3.4 provides a contingency plan that commits the District to evaluate amending rules to further strengthen prohibitions on particulate emissions. The section also discusses the impact of implementation of adopted 2007 AQMP District and CARB measures that are projected to reduce directly emitted particulates and aerosol precursors. The Coachella Valley PM10 Maintenance Plan defined in Section 3.0 of this document meets the criteria specified in CAA Sections 107 and 175A and upon approval by U.S. EPA will complete the five findings needed for granting the Coachella Valley request for redesignation to attainment of the PM10 NAAQS.

3.1 Maintenance Demonstration

According to U.S. EPA guidance, a maintenance plan may demonstrate future maintenance of the NAAQS by either showing that future emissions will not exceed the level of the attainment inventory or by modeling to show that the future mix of sources and emissions rates will not cause a violation of the NAAQS. The District will use the second approach to demonstrate that modeling will assure future maintenance of the PM10 standards.

3.1.1 Attainment Inventory and Modeling Demonstration

The primary focus of the 2003 CVSIP attainment demonstration was the now revoked annual PM10 standard then required to be attained by 2006. By 2003, the Coachella Valley had not violated the federal 24-hour PM10 standard (excluding exceptional events) for more than a decade. The update of the 24-hour PM10 standard attainment demonstration for 2006 presented in the 2003 CVSIP used the same modeling methodology (linear rollback) as in the previous versions of the CVSIP. The 2003 revision to the CVSIP provided updates to the PM10 emissions inventory that reflected the SCAQMD's 2003 AQMP point and area source emissions profiles, CARB's EMFAC2002 mobile source emissions model output and the Southern California Association of Governments' (SCAG) 2001 Regional Transportation Plan (RTP) forecast assumptions. The 2003 CVSIP attainment demonstration relied on a 2000 baseline PM10 inventory with projected baseline and controlled emissions for 2006. As outlined in Section 2.3, the control measures proposed in the 2003 CVSIP for 2006 have been fully adopted and are in effect and enforceable.

The proposed maintenance plan builds upon the 2007 AQMP's update of the Coachella Valley baseline emissions inventory. The 2007 AQMP inventory provides the District's latest point and areas source emissions, as well as CARB's EMFAC2007 updated mobile source emissions model output, and SCAG's Interim 2007 RTP assumptions (developed from the 2004 RPP). The proposed maintenance plan further updates the 2007 AQMP Coachella Valley on-road mobile source and paved road dust emissions based on planning assumptions from SCAG's 2007 Interim RTP. The baseline PM10 inventory is provided for 2002 the base-year of the 2007 AQMP. Future-year baseline projections are provided for several milestone years including 2006, 2010, 2011, 2012, 2014, 2020, 2023 and 2030.

The proposed maintenance plan also revises the 2003 CVSIP PM10 modeling attainment demonstration using the updated baseline inventory, a 2002 base-year design value, and revised estimates of baseline Basin PM10 transport to the Coachella Valley. The current PM10 attainment demonstration builds upon the modeling analysis introduced in the 1996 and 2003 CVSIP revisions. The PM10 modeling analysis incorporates (1) Chemical Mass Balance (CMB) analysis to identify the fractional source contributions to the 1995 annual average PM10 concentrations at Indio, and (2) baseline emissions linear rollback to project future PM10 concentrations in the Coachella Valley. The annual average daily baseline PM10 planning inventory was used for the 24-hour average maximum calculation with one exception: fugitive windblown dust emissions due to high wind events are greatly enhanced to reflect the source contributions from the blowsand preserve areas in the Coachella Valley. The basic modeling methodology is discussed at length in the 1996 CVSIP revisions (Chapter 4) and in the results of the 2003 CVSIP revision (Chapter 3). A comprehensive discussion of the current updated attainment modeling demonstration is provided in Attachment-4 of this document.

Updated PM10 Baseline Attainment Inventory

Table 3-1 presents a detailed breakout of the updated Coachella Valley 2007 AQMP annual average day baseline attainment inventory for the PM10 emission subcategories. The inventory includes the 2002 base-year, 2006 (the 2003 CVSIP attainment-year), 2010 through 2012 (the start of the maintenance period dependent upon plan approval by U.S. EPA), 2014 (the Basin attainment date for annual average PM2.5), 2020 and 2023 (bracketing the expected horizon-year), and 2030. Also presented in Table 3-1 are the 24-hr maximum PM10 emissions from fugitive windblown dust during a high-wind event. The maximum PM10 emissions are calculated as 20 percent of the total annual emissions in the category.

Future PM10 emissions are projected to increase from the 2002 base-year inventory due to growth in the construction/demolition source category. The growth in the PM10 construction/demolition emissions category reflects SCAG's growth factor for the construction employment for Riverside County presented in the 2007 AQMP (Appendix III). The Coachella Valley construction growth factor of 2.97 from 2002 through 2030 is estimated at 10 percent lower than the county average for the same period of 3.26. Paved road dust emissions increase 0.3 TPD from 2002 to 2020. Emissions are projected to increase from 2020 to 2030 by 0.4 TPD. The increases reflect the projections of construction activities in the Coachella Valley. Paved road dust emissions from freeway traffic were held constant over the period while growth in traffic over non-freeway roads was projected to grow with increased VMT. Overall, the annual average day baseline PM10 emissions inventory will increase approximately seventy (70) percent from 2002 to 2030 but the 24-hr maximum PM10 emissions decrease by six (6) percent for the same period.

As part of the Interagency Consultation process, SCAG (personal communications with Dr. Arnold Sherwood) requested that additional emissions be added to two categories of the 2007 AQMP baseline emissions to make the emissions inventory values consistent with those presented in the Final 2008 RTP. The adjustments to the baseline proposed by SCAG reflect changes in their planning assumptions made after the adoption of the 2007 AQMP. The categories include: (1) entrained paved road dust and (2) on-road mobile sources. The adjustments included 0.3 and 0.9 TPD PM10 increase to the entrained paved road dust category in 2020 and 2030 respectively and 0.1 and 0.3 TPD increase to the on-road mobile source categories in 2020 and 2030 respectively. To support the PM10 transportation conformity emissions budget analysis, the supplemental emissions are added to each baseline category for 2020, 2023 and 2030 to demonstrate through modeling that attainment will be maintained. Emissions for 2023 are interpolated from 2020 and 2030.

TABLE 3-1

Coachella Valley 2007 AQMP Annual Average Day Baseline
PM10 Emission Inventory (TPD)

SUBCATEGORY	2002	2006	2010	2011	2012	2014	2020	2023	2030
Stationary-Point Sources	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Construction/Demolition	6.1	7.9	10	10.5	11	11.9	14.1	15.3	18.1
Entrained Road Dust/Paved	2.8	2.8	3	2.9	2.9	2.9	3.1	3.1	3.3
Entrained Road Dust/Unpaved	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Farming Operations	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3
Fugitive Windblown Dust	1.68	1.45	1.44	1.44	1.44	1.43	1.42	1.42	1.41
Other Area Sources	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.9
On-Road Mobile Sources	2	2	1.7	1.6	1.5	1.4	1.2	1.1	1.2
Off-Road Mobile Sources	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Total PM10 Emissions	16.4	17.8	19.7	20.0	20.5	21.3	23.5	24.7	27.9
Maximum Day Fugitive Windblown Dust[1]	122.6	105.9	105.1	105.1	105.1	104.4	103.7	103.7	102.9
Maximum Day Total PM10 Emissions	137.3	122.2	123.4	123.7	124.2	124.3	125.7	126.9	129.4
Supplemental Entrained Road Dust/Paved[2]	N/A	N/A	N/A	N/A	N/A	N/A	0.3	0.5*	0.9
Supplemental On-Road Mobile Sources[2]	N/A	N/A	N/A	N/A	N/A	N/A	0.1	0.2*	0.3
Total PM10 with Supplemental Emissions	16.4	17.8	19.7	20.0	20.5	21.3	23.9	25.4	29.1
Maximum Day PM10 with Supplemental Emissions	137.3	122.2	123.4	123.7	124.2	124.3	126.1	127.6	130.6

1 As in the 2003 CVSIP attainment demonstration, the 24-hr maximum PM10 emissions from fugitive windblown dust during a high-wind event represents 20 percent of the total annual emissions in the category.
2 Supplemental additions to the 2007 AQMP baseline inventory requested by SCAG to make the category totals consistent with the 2008 RTP.
* Interpolated from 2020 and 2030 values.

(Note: the 2007 AQMP emissions inventory was developed using CARB's EMFAC2007 mobile source model and the Interim 2007 RTP. Adoption of the 2008 RTP followed the adoption of the 2007 AQMP by the District Governing Board, June 1, 2007 and the California Air Resource Board on September 27, 2007. The requested adjustments to the baseline emissions in the two categories reflect modifications to the planning assumptions made by SCAG between the release of the Interim 2007 RTP and adoption of the 2008 RTP).

Updated Modeling Demonstration

Table 3-2 presents the results of the updated 24-hour PM10 attainment demonstration using the updated annual average day inventory with the enhanced fugitive windblown dust emissions used to calculate maximum concentrations during high wind events. PM10 concentrations are predicted to continue to meet the federal standard of 150 $\mu g/m^3$ in all years of the analysis.

The 2006 predicted 24-hour maximum PM10 of 129.2 $\mu g/m^3$ is approximately 86 percent of the federal standard. The simulated 2006 PM10 24-hour concentration was approximately six (6) percent higher than the peak concentration of 122 $\mu g/m^3$ observed that year at Indio. Predicted 24-hour maximum PM10 concentrations increase from 130 $\mu g/m^3$ in 2010 at the beginning of the maintenance period to just under 136 $\mu g/m^3$ in 2030.

PM10 predicted 24-hour maximum concentrations with the conformity emissions for 2020 through 2030 range from 2 to 6 $\mu g/m^3$ higher than those estimated for the baseline emissions scenario. The predicted 2010 maximum 24-hour PM10 conformity attainment concentration (130 $\mu g/m^3$) used the baseline emissions inventory. Predicted maximum 24-hour PM10 conformity attainment concentrations for 2020, 2023 and 2023 valued 134, 136 and 142 $\mu g/m^3$, respectively. PM10 concentrations calculated for the conformity emissions are predicted to continue to meet the federal standard of 150 $\mu g/m^3$ in all years of the analysis.

A detailed discussion of the updated modeling attainment demonstration is provided in Attachment 4 of this document).

3.1.2 Transportation Conformity Requirements

The federal transportation conformity regulation requires SIPs to specify the level of on-road motor vehicle emissions that are consistent with attainment and maintenance of air quality standards. To receive federal approval and funding, transportation agencies must demonstrate that emissions from new transportation plans, programs and projects conform to these "emission budgets."

TABLE 3-2

Emissions, Observed and Model-Predicted PM10 Concentrations

Year	PM10 Emissions Scenario	PM10-Maximum Day Planning Inventory (TPD)	Observed 24-hr Maximum Concentration (µg/m^3)	Predicted 24-hr Maximum Concentration (µg/m^3)
2002	Baseline	137.3	139	N/A
2006	Baseline	122.2	122	129.2
2010	Baseline	123.4	N/A	129.7
2010	Conformity	123.4	N/A	129.7
2011	Baseline	123.7	N/A	129.1
2012	Baseline	124.2	N/A	129.5
2014	Baseline	124.3	N/A	129.8
2020	Baseline	125.7	N/A	131.5
2020	Conformity	126.1	N/A	133.7
2023	Baseline	126.9	N/A	132.6
2023	Conformity	127.6	N/A	136.0
2030	Baseline	129.4	N/A	136.1
2030	Conformity	130.6	N/A	142.0

Budget Approach

As part of its approval of the 2003 revisions to the CVSIP (Federal Register: November 14, 2005 [Volume 70, Number 218]), U.S. EPA approved the Coachella Valley PM10 motor vehicle emissions budget of 10.9 TPD for 2006 and following years. As described earlier in this chapter, the mobile source portion of the 2003 CVSIP emissions inventory was based on EMFAC2002. Road construction emissions are based on SCAG's 2001 Regional Transportation Plan (RTP). The proposed maintenance plan seeks to update the Coachella Valley motor vehicle emissions budgets using the most current update of the

Coachella Valley attainment emissions inventory based on EMFAC2007 and SCAG's Interim 2007 RTP assumptions.

U.S. EPA's transportation conformity rule, found in 40 CFR parts 51 and 93, details the requirements for establishing motor vehicle emissions budgets in SIPs for the purpose of ensuring the conformity of transportation plans and programs with the SIP attainment demonstration. The on-road motor vehicle emissions budgets act as a "ceiling" for future on-road mobile source emissions. Exceedances of the budget indicate an inconsistency with the SIP, and could jeopardize the flow of federal funds for transportation improvements in the region. As required by the CAA, a comparison of regional on-road mobile source emissions to these budgets will occur during the periodic updates of regional transportation plans and programs. The proposed maintenance plan substitutes EMFAC2007 on-road motor vehicle emissions estimates for the previous emissions factor model and SCAG's 2007 Interim RTP assumptions to reflect the most current motor vehicle activity data.

Table 3-3 summarizes the proposed PM10 transportation budget by emissions category. This maintenance plan proposes to set the transportation emissions conformity budget at 13 TPD, 16 TPD, and 20 TPD for 2010, 2020 and 2030 respectively. The simulated PM10 24-hour average maximum concentrations for this conformity budget meet the federal standard in each year. The maintenance plan also proposes to maintain a 20 TPD transportaion budget for the years beyond 2030.

U.S. EPA requests that states explicitly quantify how proposed motor vehicle emission budget differs from projected vehicle emissions. Figure 3-1 presents the trends of proposed transportation budget and projected transportation emissions. The proposed transportation budget equals the sum of the four transportation related component emissions in each of the milestone years. Overall, the budget grows by 54 percent from 2010 over the 20-year period. Mobile source emissions (excluding entrained paved road dust) are projected to decrease by 12 percent through the period. Growth in road construction and entrained road dust emissions are projected to reach 81 and 40 percent, respectively. Entrained unpaved road dust emissions are projected to remain constant through the period.

TABLE 3-3

Transportation Conformity PM10 Emissions Budget for 2010, 2020, 2030 and Beyond

Category	**Emissions (TPD)**		
	2010	2020	2030 And Beyond
Motor Vehicles	1.70	1.30	1.50
Re-entrained Paved Road Dust	3.00	3.40	4.20
Re-entrained Unpaved Road Dust	1.92	1.92	1.91
Road Construction	6.74	9.53	12.21
Total Transportation PM10 Emissions Budget*	13	16	20

* With rounding

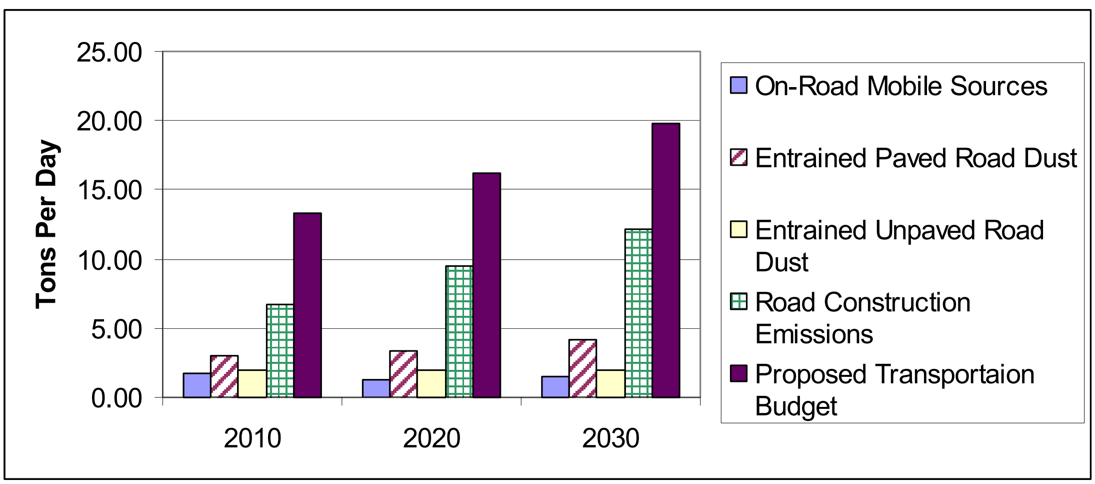


Figure 3-1

Comparison of Proposed PM10 Transportation Budgets in Horizon Year
To Projected PM10 Vehicle Emissions
(Annual Average Emissions in TPD)

3.2 Future Monitoring Network

U.S. EPA guidance states that once an area has been redesignated, the State should continue to operate an appropriate air quality monitoring network in accordance with 40 CFR Part 58, to verify the attainment status of the area. More specifically, daily PM10 sampling is required in the area reporting the peak PM10 concentration.

As discussed in Section 2.2.1, the District presently operates FRM samplers at the Palm Springs and Indio air quality monitoring stations in accordance with 40 CFR, part 58. The Palm Springs monitor operates on a one-in-six day cycle while the Indio FRM monitor, which reports the Coachella Valley peak concentrations, operates on an enhanced one-in-three day sampling schedule. In accordance with the requirements outlined in U.S. EPA guidance, the District will conduct a more rigorous quality assurance review of the 2005-2007 BAM for both Indio and Palm Springs and submit that data to AQS designating the monitors as FEM. Furthermore, the District will phase-in upgraded TEOM PM10 monitors at each site as FEM samplers to fulfill the daily monitoring requirements specified in U.S. EPA guidance and provide support for District Rule 403.1 implementation.

The District will assure the on-going quality of the measured data by performing the operational procedures for data collection including routine calibrations, pre-run and post-run test procedures, and routine service checks. An annual review of the District's entire air quality monitoring network is required by federal regulations as a means to determine if the network is effectively meeting the objectives of the monitoring program. If relocation or a closure is recommended in the annual network review, reports are submitted to the U.S. EPA and the ARB to document compliance with siting criteria. The data collection procedures already in place, in conjunction with the annual review program, will ensure that future PM10 ambient concentrations are monitored in the Coachella Valley.

The District is committed to continue operating the FRM and the continuous BAM PM10 network in the Coachella Valley to verify the attainment status of the area.

3.3 Verification of Continued Attainment

U.S. EPA guidance requires the District to periodically review the assumptions and data for the attainment inventory and demonstration. This guidance further suggests that the reevaluation take place every three years and include a complete review of the modeling assumptions and input data. The purpose of the reevaluation is to determine the effectiveness of the control strategy. The District will conduct a reevaluation of the Coachella Valley PM10 Maintenance Plan as part of the AQMP process. In accordance with U.S. EPA guidance, a revision to the PM10 Maintenance Plan for the subsequent ten year maintenance planning period will submitted to U.S. EPA prior to the horizon date (to be determined upon U.S. EPA approval of the maintenance plan.

In addition to the verification actions listed above, the District will analyze the PM10 air quality data collected on a daily basis using the BAMs and on a one-in-three (Indio) or one-in-six (Palm Springs) sampling schedule using the FRM analyzers. Specifically, daily PM10 24-hour average concentrations will be compared directly with the 24-hour PM10 NAAQS.

3.4 Contingency Plan

CAA Section 175A(d) requires maintenance plans to identify contingency provisions to offset any unexpected increases in emissions and ensure maintenance of the standard.

3.4.1 Emissions Reductions

Contingency provisions are traditionally held in reserve and implemented only if an area violates the standard. The 24-hour PM10 NAAQS is exceeded in the Coachella Valley only under high wind conditions where emissions from the blowsand preserves are entrained as fugitive dust. These occurrences are thoroughly documented and are flagged as exceptional events. Implementation of District Rule 403.1 has been an effective measure to abate emissions from anthropogenic source activities such as construction and farming during forecasted and observed high wind events.

Emissions reductions from the implementation of the 2007 AQMP revision to attain the annual PM2.5 standard in the upwind areas of the Basin are estimated to reduce the transported PM10 contribution to the Coachella Valley by 14 percent by 2015 and an additional 6 percent by 2020. Recently adopted SIP control measures (from 2007 through third quarter 2009) by the District and CARB together have achieved 2014 Basin emissions reductions of 107 TPD NOx, 10 TPD PM2.5, 32 TPD VOC and 17 TPD SOx. Implementation of the AQMP serves as an "ongoing contingency measure" since emissions reductions designed to attain the PM2.5 and ozone standards will effectively reduce ambient PM10. Overall, directly emitted particulate matter and particulate precursor emissions will be reduced in the Basin and Coachella valley simultaneously through the implementation of several key District and CARB adopted measures. These are summarized in Table 3-4.

Existing BARCT rules will continue to control local PM10 emissions despite growth in the Coachella Valley. While 24-hour averaged PM10 concentrations are not expected to exceed the standard, the District will commit to:

(1) annual reviews of the effectiveness of Rules 403, 403.1 (in reducing PM10 emissions when high wind events occur in the Coachella Valley), 444, 1157, 1158 and 1186;

(2) establish a trigger to implement a contingency action; whereby;

(3) if the 24-hour average PM10 standard is violated in the Coachella Valley, excluding exceptional events; then,

(4) the District will evaluate amending Rules 403, 403.1, 444, 1157, 1158 and 1186 to further strengthen prohibitions on particulate emissions.

3.4.2 Implementing Agency

The CARB has the authority to set vehicle emissions standards and fuel formulation requirements for California.

The District has the authority and is the agency responsible for developing and enforcing air pollution BARCT rules in the Coachella Valley for stationary and areawide sources.

3.5 Contingency Plan Implementation

The District is committed to a formal review of the PM10 Maintenance Plan as a component of its next AQMP revision. Subsequent plan revisions to address the latest revisions to the federal ozone standard and meet the California tri-annual reporting will serve as opportunities to conduct reviews of the Coachella Valley PM10 Maintenance Plan. Also, the District will review ambient PM10 daily monitoring data to assess continued maintenance of the 24-hour standard. If either of these mechanisms indicates that additional emissions reductions are needed and the adopted BARCT rules are not achieving the committed reductions, the District will ensure that enhancements to existing rules or additional measures are developed and adopted to achieve the necessary reductions as expeditiously as possible.

The District also commits to submit a second maintenance plan 8 years after redesignation to show maintenance for at least the next 10 year period.

3.6 Authority

The CARB has the authority to set vehicle emissions standards and fuel formulation for California.

The District has the authority and is the agency responsible for developing and enforcing air pollution BARCT rules in the Coachella Valley for stationary and areawide sources.

Table 3-4

Summary of District and CARB NOx, SOx, and PM (PM10/PM2.5) Rules Adopted

Rule/CCR	Title	Adoption Year	Targeted Emissions
	District Rules		
444	Open Burning	2008	PM10/PM2.5
445	Wood Burning Devices	2008	PM2.5
1110.2	Emissions from Gaseous - and Liquid-Fueled Internal Combustion Engines	2008	NOx
1146	Emissions of Oxides of Nitrogen from Industrial, Institutional and Commercial Boilers, Steam Generators, and Process Heaters	2008	NOx
1146.1	Emissions of Oxides of Nitrogen from Small Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters	2008	NOx
1147	NOx Reductions From Miscellaneous Sources	2008	NOx
1157	PM_{10} Emission Reductions from Aggregate and Related Operations	2006	PM10
1158	Storage, Handling, and Transport of Coke, Coal and Sulfur	2008	PM10
1186	PM_{10} Emissions from Paved and Unpaved Roads, and Livestock Operations	2008	PM10
	CARB Rules		
Title 17, §93000	Allowable Speeds for Ocean-Going Vessels Operating in Coastal Waters	2007	NOx, PM
Title 13, §2299.3 Title 17, §93118.5	Ocean-Going Vessels While At Berth At A California Port	2007	PM, NOx
Title 13, §2416	In-Use Off-Road Diesel Vehicles	2007	NOx, PM2.5
Title 13, §2025	In-Use On-Road Diesel Vehicle Regulation	2008	NOx, PM2.5
Title 13, §2299.2 Title 17, §93118.2	Ocean-Going Ship Main Engine And Auxiliary Boiler	2008	SOx, NOx, PM

4.0 SUMMARY CHECKLIST

Table 4-1 summarizes the status of the elements that need to be satisfied in order to meet CAA requirements as well as conform to the guidance documents prepared by the U.S. EPA (e.g., request for redesignation and maintenance plan).

Table 4-1

Summary Checklist of Document References

Plan Components	CAA/U.S. EPA Requirements	Status	Document Reference
Redesignation Request	Attainment with NAAQS	Conditions met	Section 2.1.2
	U.S. EPA approval of State Implementation Plan*	Conditions met	Section 2.2
	Air quality improvements due to permanent and enforceable emissions reductions	Conditions met	Section 2.3
	Section 110 and Part D requirements have been meet	Conditions met	Section 2.4
	U.S. EPA approval of a maintenance plan and contingency plan	Pending (as part of this submittal)	Section 3
Maintenance Plan	Attainment inventory	Conditions met	Section 3.1.1
	Maintenance demonstration	Conditions met	Sections 3.1.1, 3.1.2, and 3.1.3
	Monitoring network	Commitment established	Sections 2.3 and 3.2
	Verification of continued attainment	Commitment established	Section 3.3
	Contingency Plan	Commitment established	Sections 3.4, 3.5 and 3.6

* See Attachment-5

References

Kim, B.M., M.D. Zeldin, and C.S. Liu, 1992, "Source Apportionment Study for State Implementation Plan Development in the Coachella Valley," A&WMA PM10 Specialty Conference, Phoenix, AZ.

SCAQMD, 1990, "State Implementation Plan for PM10 in the Coachella Valley."

SCAQMD, 1996, "Final Coachella Valley PM10 Attainment Redesignation Request and Maintenance Plan State Implementation Plan."

SCAQMD, 2003, "2003 Coachella Valley PM10 State Implementation Plan, (A Revision to the 2002 Coachella Valley PM10 State Implementation Plan).

SCAQMD, 2007, "Final 2007 Air Quality Management Plan."

ATTACHMENT - 1

Air Quality Data Certification Letters to U.S. EPA

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

December 7, 2006

Mr. Sean Hogan, Chief
Technical Support Office
Air Division
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Hogan:

The South Coast Air Quality Management District (SCAQMD) is responsible for submitting National Air Monitoring Station (NAMS) and State and Local Air Monitoring Station (SLAMS) air quality data to the Air Quality System (AQS) for those AQS monitors under the control of the SCAQMD. In accordance with 40 CFR Part 58, this letter certifies that the 2005 data for these monitors are complete and accurate to the best of my knowledge. This letter of certification fulfills the certification objectives of the Section 105 Grant for Fiscal Year 2006.

The resultant wind speed and resultant wind direction data, which are calculated from wind speed and direction measurements, has not been submitted as there was a program failure which corrupted the calculation routine. SCAQMD staff has retrieved the backup data and is in the process of recalculating the vector values. This data, which makes up less than three percent of the total data submitted, will be reviewed and submitted within the next two months.

If you have any questions regarding this letter, please feel free to contact me at (909) 396-2105, or Dr. Philip Fine, Atmospheric Measurements Manager-Science and Technology Advancement, at (909) 396-2239.

Sincerely,

Chung S. Liu
Deputy Executive Officer
Science & Technology Advancement

CSL:HH:PF:AR:SC:cv

cc: M. Leonard

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

July 26, 2007

Mr. Sean Hogan, Chief
Technical Support Office
Air Division
U.S. EPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105-3901

Dear Mr. Hogan:

The South Coast Air Quality Management District (SCAQMD) is responsible for submitting National Air Monitoring Station (NAMS) and State and Local Air Monitoring Station (SLAMS) air quality data to the Air Quality System (AQS) for those AQS monitors under the control of the SCAQMD. In accordance with 40 CFR Part 58, this letter certifies that the 2006 ambient concentration data and the quality assurance data are completely submitted to AQS, and the ambient data are accurate to the best of my knowledge taking into consideration the quality assurance findings. This letter also certifies the wind speed and wind direction data for 2005, which has not been certified previously. This letter of certification fulfills the certification objectives of the Section 105 Grant for Fiscal Year 2007.

The required summary reports have been sent electronically to Norma Douglas and Catherine Brown at EPA region 9.

If you have any questions regarding this letter, please feel free to contact me at (909) 396-2105, or Dr. Philip Fine, Atmospheric Measurements Manager, Science and Technology Advancement, at (909) 396-2239.

Sincerely,

Chung S. Liu
Deputy Executive Officer
Science & Technology Advancement

CSL:HH:PF:RE:mh

cc: M. Leonard

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

June 25, 2008

Mr. Wayne Nastri, Region Administrator
U.S. EPA REGION 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Mr. Nastri:

The South Coast Air Quality Management District (SCAQMD) is responsible for submitting National Air Monitoring Station (NAMS), State and Local Air Monitoring Station (SLAMS), Photochemical Assessment Monitoring Station (PAMS), and air quality data to the Air Quality System (AQS) for those AQS monitors under the control of SCAQMD. In accordance with 40 CFR Part 58, this letter certifies that the 2007 ambient concentration data and the quality assurance data, with exception to PM10 and PAMS Burbank continuous GC VOC data, are completely submitted to AQS. The ambient data are accurate to the best of my knowledge, taking into consideration the quality assurance findings. This letter of certification fulfills the certification objectives of the Section 105 Grant for Fiscal Year 2008.

The required summary reports have been sent electronically to Sean Hogan at U.S. EPA Region 9.

If you have any questions regarding this letter, please feel free to contact me at (909) 396-2105, or Dr. Jason Low, Quality Assurance Manager, Science and Technology Advancement, at (909) 396-2269.

Sincerely,

Chung S. Liu
Deputy Executive Officer
Science and Technology Advancement

CSL: JL

cc: M. Leonard
R. Eden
P. Fine

South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 · www.aqmd.gov

June 26, 2009

Ms. Laura Yoshii, Region Administrator
U.S. EPA REGION 9
75 Hawthorne Street
San Francisco, CA 94105

Dear Ms. Yoshii:

The South Coast Air Quality Management District (SCAQMD) is responsible for submitting National Air Monitoring Station (NAMS), State and Local Air Monitoring Station (SLAMS), Photochemical Assessment Monitoring Station (PAMS), National Air Toxics Trends Stations (NATTS) and air quality data to the Air Quality System (AQS) for those AQS monitors under the control of SCAQMD. In accordance with 40 CFR Part 58, this letter certifies that the 2008 ambient concentration data and the quality assurance data are completely submitted to AQS, with the following exceptions:

- PM10 FRM
- TSP
- NATTS (PM Metals and VOC)
- 4^{th} Quarter $PM_{2.5}$
- Continuous PM
- Ozone, NO_2, CO and SO_2 for Mira Loma (Site ID: 06-065-8005)

AQMD is conducting the final stages of review for most of the above data and anticipates its certification readiness soon.

This letter certifies data not certified last year which includes the 2007 PAMS Burbank continuous GC VOC, the NATTS carbonyl and VOC data, and PM10 2007 data.

The ambient data are accurate to the best of my knowledge, taking into consideration the quality assurance findings. This letter of certification fulfills the certification objectives of the Section 105 Grant for Fiscal Year 2009.

The required summary reports have been sent electronically to Matthew Lakin at U.S. EPA Region 9.

If you have any questions regarding this letter, please feel free to contact me at (909) 396-2105, or Dr. Jason Low, Quality Assurance Manager, Science and Technology Advancement, at (909) 396-2269.

Sincerely,

Chung S. Liu
Deputy Executive Officer
Science and Technology Advancement

CSL: JL

cc: M. Leonard
R. Eden
P. Fine

ATTACHMENT - 2

EXCEPTIONAL EVENTS
CONTRIBUTING TO HIGH PM10 CONCENTRATIONS
IN THE COACHELLA VALLEY

Introduction

This attachment provides an overview of the physical mechanisms that contribute to the development and identification of PM10 exceptional events that impact the Coachella Valley. This summary includes characterization of the blowsand fugitive dust emissions and source areas, the meteorological setting that contribute to high wind storms and a historical perspective of the frequency of PM10 exception events as observed in the Coachella Valley.

Exceptional Event Criteria

The two events documented herein satisfy the criteria set forth in 40 CFR 50.1(j), which defines an exceptional event as an event that:

- affects air quality;
- is not reasonably controllable or preventable;
- is either an event caused by human activity that is unlikely to recur at a particular location or a natural event; and
- is determined by the EPA Administrator in accordance with the Exceptional Events Rule to be an exceptional event.

Exceptional Events Rule Background

Since 1977 the United States Environmental Protection Agency (EPA) has implemented policies to address the treatment of ambient air quality monitoring data that has been affected by exceptional or natural events. In 1996, EPA developed a guidance document entitled Areas Affected by PM-10 Natural Events, which provided criteria and procedures for States to request special treatment (i.e., flagging for exclusion from standard compliance consideration) for data affected by natural events (e.g., wildfire, high wind events, and volcanic and seismic activities). Since 1995, EPA has approved several requests made by the South Coast Air Quality Management District (AQMD) through the California Air Resources Board (CARB) to apply the Natural Events Policy in order to flag violations of the 24-Hour PM10 NAAQS in the Coachella Valley for natural events that involved uncontrollable high winds. Air quality has continued to improve through implementation of best available control technologies, required by AQMD rules and local government ordinances. AQMD also protects the public through the issuance of area-specific air quality forecasts and episode notifications, as well as daily high-wind and windblown dust forecasts and advisories for the Coachella Valley.

On March 14, 2007, EPA promulgated a formal rule, entitled: *The Treatment of Data Influenced by Exceptional Events*, known as the Exceptional Events Rule. Exceptional events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable or preventable using techniques that tribal, state or local air agencies may implement in order to attain and maintain the NAAQS. These events are flagged in the EPA AIR Quality Subsystem (AQS) database as exceptional events. The data remains available to the public but are not counted toward attainment status. The EPA rulemaking:

- ensures that air quality measurements are properly evaluated and characterized with regard to their causes;
- identifies reasonable actions that should be taken to address the air quality and public health impacts caused by these types of events;
- avoids imposing unreasonable planning requirements on state, local and tribal air quality agencies related to violations of the NAAQS due to exceptional events;
- ensures that the use of air quality data, whether afforded special treatment or not, is subject to full public disclosure and review.

Geographic Setting

Southern California's Coachella Valley, shown in Figure A-2-1, consists of approximately 2,500 square miles in central Riverside County, aligned northwest-southeast from the San Gorgonio Pass (often referred to as the Banning Pass) to the Salton Sea and bounded by the Little San Bernardino Mountains to the northeast and the San Jacinto Mountains to the southwest. The Santa Rosa Mountains are to the west of the northern part of the Salton Sea. The AQMD air quality monitoring stations in the Coachella Valley are located at Palm Springs and Indio. The nearest South Coast Air Basin station to the Coachella Valley is located at Banning Airport in the San Gorgonio Pass to the west of the Coachella Valley.

Figure A-2-2 shows a broader view around the Coachella Valley to show the desert areas of southern California and stations used in the analysis of windblown dust due to thunderstorm activity in the southwestern deserts of the United States. Figure A-2-3 shows the Coachella Valley with sand areas mapped along with the Coachella Valley Preserve system that are undisturbed for ecological purposes, such as the Fringe-Toed Lizard habitat. The sand areas along the Whitewater Wash to the north of Palm Springs and the preserve system are the main source areas for natural blowsand in the Coachella Valley. The urban sprawl has covered much of the former sand areas from Palm Springs down the Valley to Indio.

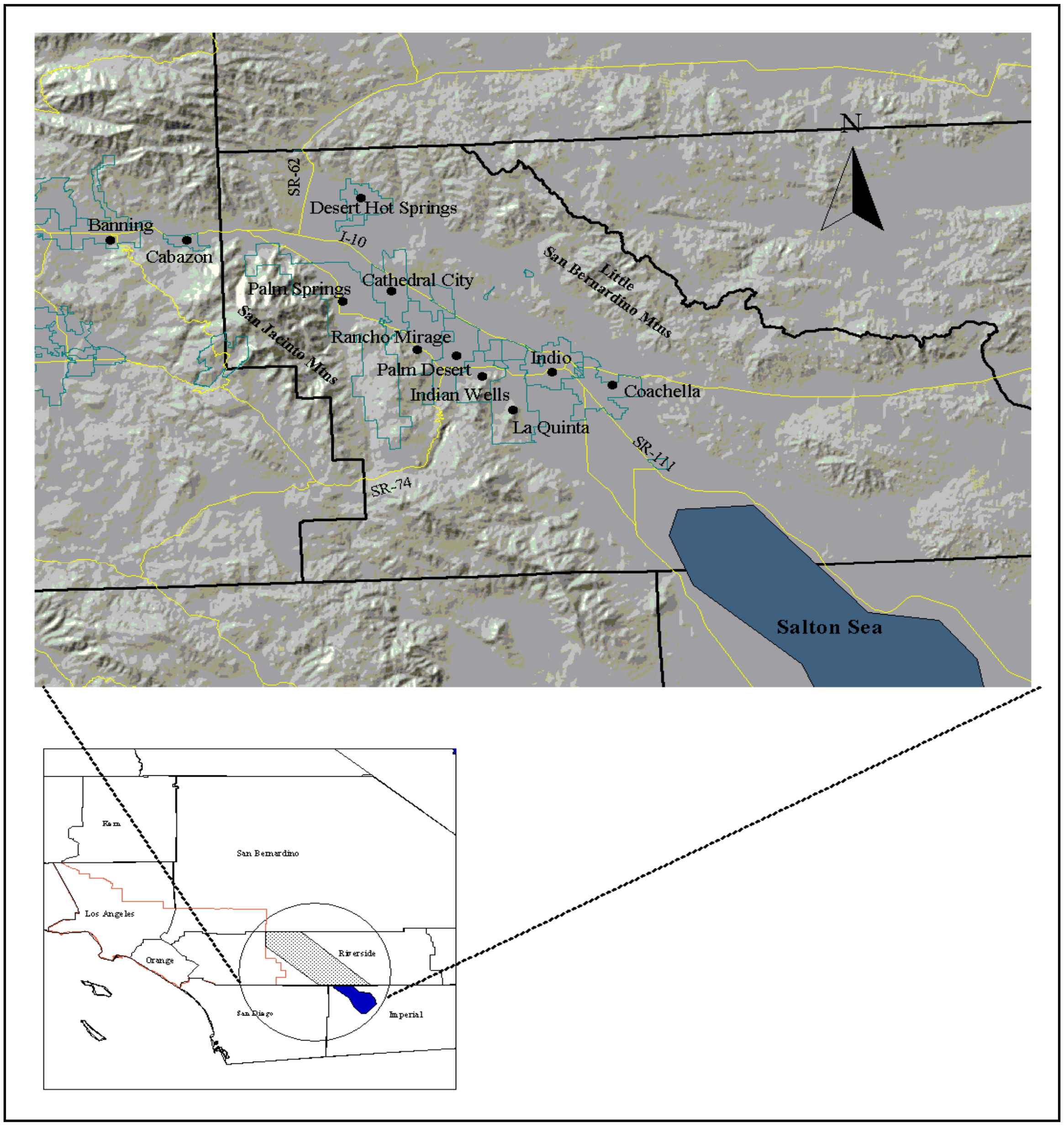


FIGURE A-2-1

Location and Topography of the Coachella Valley

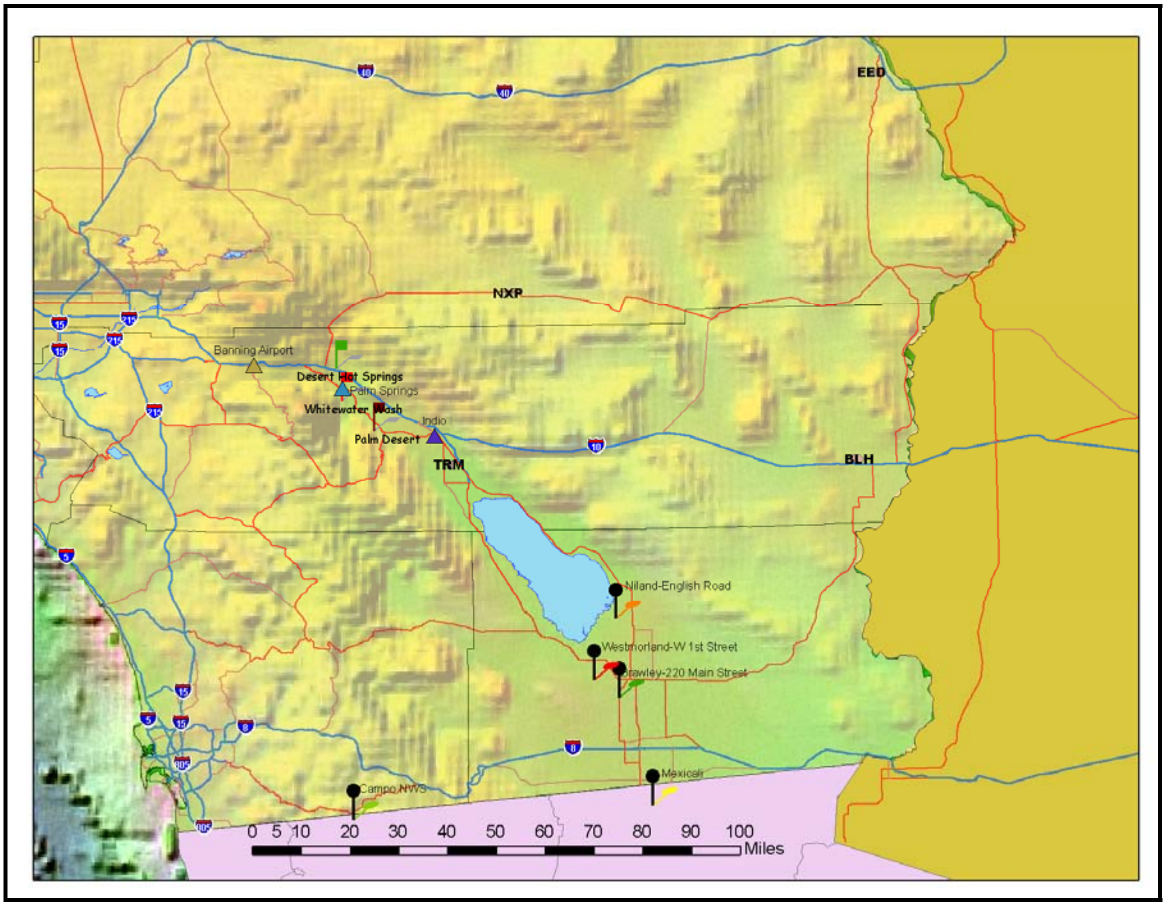


FIGURE A-2-2

Map of Southern California Desert Areas Showing AQMD Air Quality Monitoring Stations (triangles), AQMD Coachella Valley Wind Network (flags), Imperial County Air Quality Monitoring Stations (circles), and NWS/FAA Airport Weather Stations

(TRM = Thermal Airport; BLH = Blythe Airport; EED = Needles Airport; NXP = Twentynine Palms MCAS; and PSP, not shown, is between the Palm Springs Air Monitoring Station and the Whitewater Wash Wind Station)

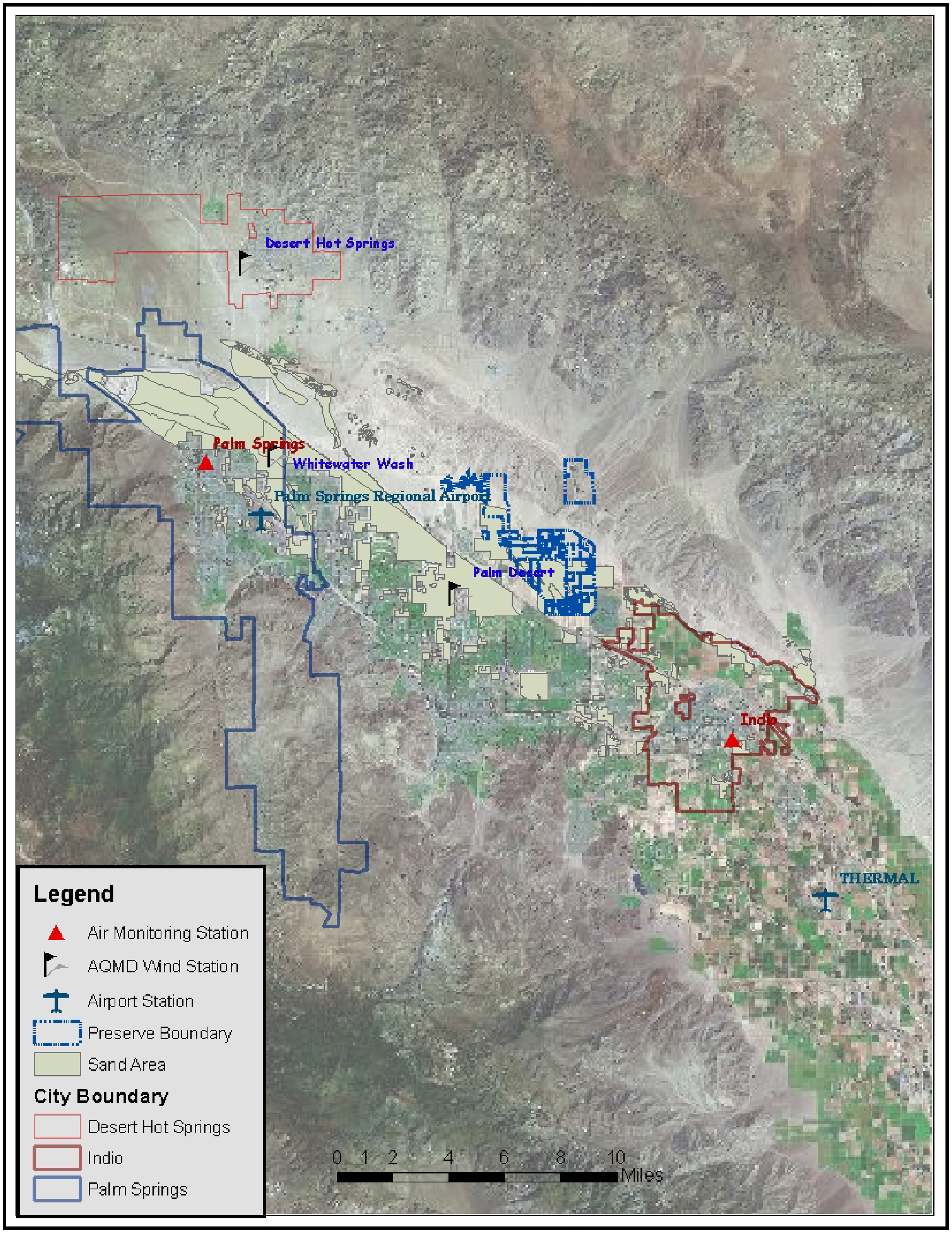


FIGURE A-2-3

Map of Coachella Valley Showing Desert Sand Areas; Protected, Natural Preserve Areas; AQMD Air Quality Monitoring Stations (triangles); AQMD Coachella Valley Wind Network (flags); and NWS/FAA Airport Weather Stations

Blowsand Emissions

In the Coachella Valley, there is a natural sand migration, called the blowsand process, caused by the action of winds on the vast areas of sand. This process produces PM10 in two ways: (1) by direct particle erosion and fragmentation (natural PM10), and (2) by secondary effects, as sand deposits on road surfaces are ground into PM10 by moving vehicles and resuspended in the air (anthropogenic PM10). Although the sand migration progress is somewhat disrupted by urban growth in the valley, the overall region of blowsand activity encompasses approximately 130 square miles extending from near Cabazon to Indio. The sand is supplied by weather erosion of the surrounding mountains and foothills. Transporting winds emanate from the San Gorgonio Pass and occur most frequently and with the greatest intensity during the spring and early summer months. The primary blowsand source areas, mainly in the alluvial floodplain of the Whitewater River (i.e., the Whitewater Wash), presently contain over two billion cubic yards of wind-deposited sand. The blowsand process varies considerably over time, depending on the availability of flood-provided sand, fluctuations in the transporting wind regime, and to a lesser extent, changes in vegetative cover within the Valley. On average, 180,000 cubic yards of sand are transported by wind sources annually.[1] The California desert areas to the east and south of the Coachella Valley, as well as desert areas of northern Mexico, Arizona and Nevada, also have significant natural processes that produce windblown PM10. In particular, high winds associated with gust fronts from thunderstorms over the deserts of the southwestern US create windblown dust that is entrained in the atmosphere and transported to the Coachella Valley, under flow regimes from the east and south.

Meteorological Mechanisms for Coachella Valley High-Wind PM10 Events

For high PM10 events to occur in the Coachella Valley, widespread high winds must be sustained to suspend and transport the blowsand. These exceptional wind events occur infrequently in the Coachella Valley but are likely to be associated with unhealthful PM10 levels due to windblown dust. The strongest and most persistent winds typically occur immediately east of Banning Pass, in an area used primarily for wind power generation. Wind conditions in the remainder of the Coachella Valley are geographically

[1] Weaver, Donald, Initial Blowsand Study for the Coachella Valley, October 1992. Included as Appendix A to the Coachella Valley PM10 Attainment Redesignation Request and Maintenance Plan, SCAQMD, December, 1996. http://www.aqmd.gov/aqmp/cvves/#download

distinct, with stronger winds in the open, middle portion of the valley and lighter winds closer to the foothills. Further to the southeast near Indio where the valley widens, wind velocities decrease. The lower wind velocities allow more deposition of the entrained particles to the surface in this area.

Three primary meteorological mechanisms were initially identified that lead to high winds and windblown dust in the Coachella Valley[2]. A relatively rare additional mechanism was identified in 2004. The four mechanisms are summarized as follows:

1. Strong pressure and density gradients between the marine-modified coastal air mass and the desert air mass;
2. Storm system/frontal passages (mainly associated with winter storms);
3. Strong downbursts and gust fronts from thunderstorm activity (mainly summertime);
4. Strong Santa Ana wind event (mainly in fall or early winter).

In Type 1 high-wind events, low surface pressures in the desert cause cooler and denser ocean-modified air to move through the San Gorgonio Pass into the Coachella Valley. As synoptic weather patterns reinforce the localized regime through wind-inducing surface pressure gradients, strong and widespread winds result that frequently exceed 30 mph. These winds can persist for many hours and are predominantly from the west-northwest. Type 1 events are most prevalent in the spring, but can occur at other times of the year.

In Type 2 events, the passage of storm systems can similarly induce strong winds through the San Gorgonio Pass, as frontal passages cause surface wind shifts (wind shear) and speed increases that can be reinforced by strong winds aloft. These storm passages often produce little or no precipitation in the Coachella Valley. The winds typically last only a few hours and are most prevalent with dynamic, fast-moving winter storms.

Type 3 wind events involve strong winds generated by summertime thunderstorms. The convective activity produces strong downdrafts of cooler air, causing wind gusts that can exceed 60 mph. While the thunderstorms are usually localized events of short duration, the associated downbursts and outflows can suspend large amounts of natural desert soil in the atmosphere that can be transported over large distances, even though the gustiness subsides. Also, numerous thunderstorm cells can form thunderstorm complexes over the southwestern US deserts to produce widespread areas of windblown dust and complicated wind flows. The entrained dust can be

[2] Durkee, K.R. The EPA Natural Events Policy as Applied to High-Wind PM10 Exceedances in the Coachella Valley. Proceedings of the Air and Waste Management Assn. Annual Meeting, June 1998.

deeply suspended to transport dust to the Coachella Valley from the Southern California deserts and areas of Mexico, Arizona and Nevada, even under relatively weak local wind regimes in the Coachella Valley. The typical weather pattern for producing such thunderstorms in the southwestern US and transport to the Coachella Valley is one in which tropical moisture is advected (transported) into the deserts from the south and southeast. Therefore, these Type 3 events are most often associated with the mid- to late-summer "monsoonal" conditions that bring light southeasterly winds to the Coachella Valley.

Type 4 wind events involve very strong Santa Ana wind events where high pressure and cold temperatures over the Great Basin causes strong northerly or north-northeasterly winds that accelerate downhill on the lee side of the San Bernardino Mountains. These relatively uncommon events move blowsand from the Morongo Valley and can cause very high PM10 concentrations at the Palm Springs air monitoring station, as well as at the Indio station. These strong Santa Ana wind events mainly occur in fall or early winter.

Historical Perspective

Table A-2-1 summarizes the days with high PM10 in the Coachella Valley, defined as days exceeding 150 $\mu g/m^3$, between January 1, 1993 and December 31, 2008. The start year of 1993 was the beginning of the period considered when the EPA Natural Events policy was first implemented. The NAAQS violations, with PM10 exceeding 150 $\mu g/m^3$, that occurred during this period have been subject to previous natural events evaluations. Since 1993, no 24-hour NAAQS violations occurred in the Coachella Valley that were not associated with high wind events. Three days are shown in Table A-2-1 that are close to 150 $\mu g/m^3$, but did not exceed the 24-hour PM10 standard. These three high values were also due to high wind natural events, but were not allowed to be submitted due to the EPA policy at the time requiring that the 24-hour short-term standard be exceeded to quality for flagging.

Throughout the 16 year period, 23 days exceeded the 150 $\mu g/m^3$ NAAQS concentration at Indio, for an overall average of just under 1.5 violations per year. A total of 34 days exceeded the 120 $\mu g/m^3$ threshold at Indio, all associated with high wind natural events. Starting March 22, 2000, the frequency of SSI samples at Indio was increased to every three days to better capture the windblown dust events that occur in the Coachella Valley. During the nine years with 1-in-3-day data, 17 days exceeded the 24-hour PM10 NAAQS, for an average of 1.9 violations per year. In all cases, Indio had higher PM10 concentrations than Palm Springs, on the 1-in-6 sampling days when data was available from both stations. Palm Springs only exceeded the NAAQS on two days and only exceeded 120 μg/m^3 on one additional day during this period.

TABLE A-2-1

Historical Summary of Coachella Valley SSI PM10 24-HourHigh Concentrations exceeding 150 μg/m^3 since January 1, 1993 along with primary meteorological mechanisms associated with high-wind natural events

Event Date	Indio SSI PM10 (μg/m^3)	Palm Springs SSI PM10 (μg/m^3)	Meteorological Mechanism
June 2, 1995	**199**	39	1
January 16, 1996	**155**	88	2
July 26, 1996	**215**	130	3
March 17, 1997	**157**	35	2
April 28, 1997	**182**	32	1
June 16, 1998	**158**	53	1
April 21, 2000	**190**	*	1
May 15, 2000	**201**	*	2
September 21, 2000	**183**	*	1
June 3, 2001	**245**	*	1
June 12, 2001	**180**	*	1
July 3, 2001	**155**	*	3
August 17, 2001+++	**604**	**432**	3
August 20, 2001	149+	*	1
September 13, 2001	**165**	*	3
May 8, 2002	**177**	**	1
November 25, 2002	**276**	*	4
January 6, 2003	**178**	*	4
May 15, 2003	**227**	47	1
June 20, 2003	148++	28	1
June 23, 2003	**309**	*	1
October 9, 2004	**161**	*	2
July 16, 2006	**313**	**226**	3
March 22, 2007	**210**	*	3
April 6, 2007	**157**	64	1
April 12, 2007	146++	83	2

+ High PM10 concentration below PM10 24-hour NAAQS; submitted but not approved for natural event flagging (EPA Region 9 policy at the time).

++ High PM10 concentration below 150 μg/m^3 24-hour NAAQS; not submitted for natural event flagging.

+++ On August 17, 2001 Banning Airport also measured 219 μg/m^3.

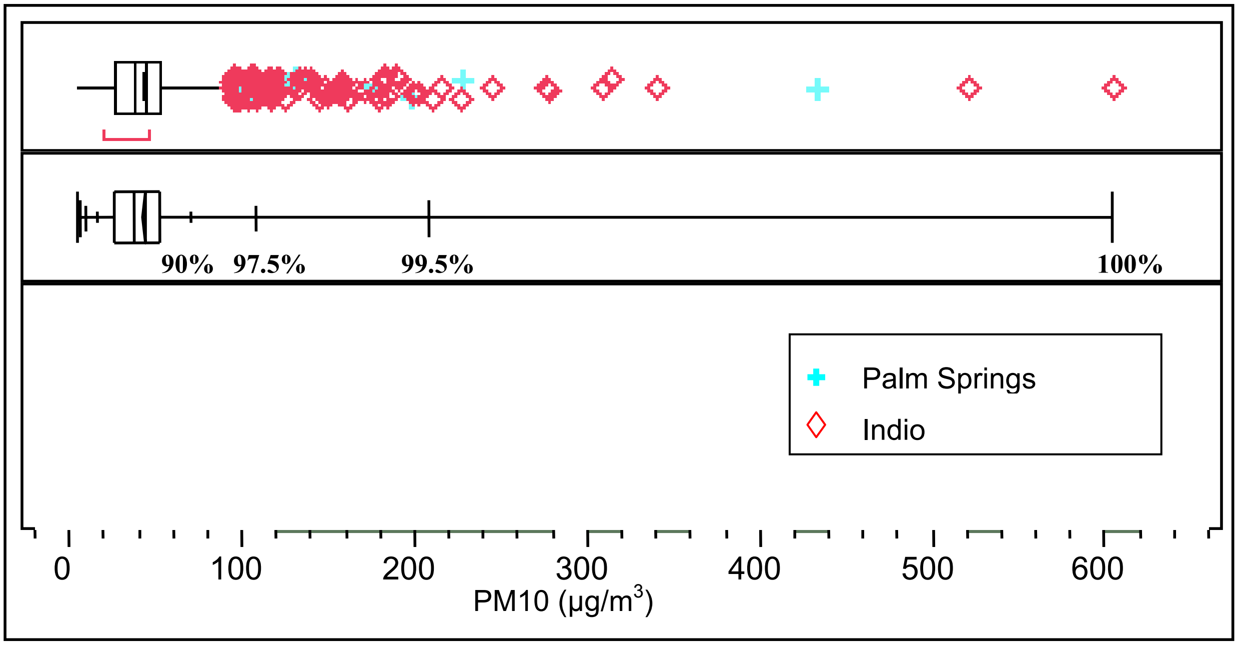
* 1-in-3 sampling day for Indio; no Palm Springs 1-in-6 day sample.

** 1-in-6 sampling day for Palm Springs, but sample did not run.

On 12 of the 24 days that exceeded 150 $\mu g/m^3$, Type 1 mechanisms were the primary cause of the high winds and windblown PM10. On these days, strong onshore flow and a deep marine layer over the South Coast Air Basin led to winds through the San Gorgonio Pass, suspending sand from the natural blowsand source areas. Due to the geography of the Coachella Valley, this mechanism does not cause high PM10 at Palm Springs, which is sheltered from these flows by the San Jacinto mountains. Four days during this period were primarily caused by Type 2 mechanisms, where fast-moving storm systems and frontal passages created strong winds through the San Gorgonio Pass. The Type 3 mechanism, where thunderstorm outflows created strong winds in the desert, caused six high PM10 days, including the highest 24-hour average PM10 (604 $\mu g/m^3$) measured in the Coachella Valley during this period. Dust generated from thunderstorm outflows was responsible for all three high PM10 concentrations measured at Palm Springs, as relatively light southeasterly "monsoonal" wind flows brought dust generated from thunderstorm outflows over the deserts of northern Mexico and Arizona to the entire Coachella Valley. Two events were associated with the Type 4 mechanism, where strong Santa Ana winds brought high winds to the Coachella Valley, entraining dust from the Morongo Valley.

Figure A-2-4 shows the distribution of all Federal Reference Method (FRM) Size-Selective Inlet (SSI) PM10 measurements at the Coachella Valley air monitoring stations (Indio and Palms Springs) from January 1990 through June 2008. The plotted values for Indio and Palms Springs are considered statistical outliers. Concentrations above the 97.5 percentile value (108 $\mu g/m^3$ and above) are above the normal range of data for the Coachella Valley and any value that exceeds the 24-hour federal PM10 standard of 150 $\mu g/m^3$ is well outside the normal range. As was shown in Table A-2-1, all concentrations exceeding the federal PM10 standard in the Coachella Valley since January 1, 1993 have been attributed to high wind events. Furthermore, PM10 sulfate and nitrate measurements on high PM10 days in the Coachella Valley are low, as compared to such measurements in the South Coast Air Basin, indicating primarily crustal material contributing to PM10 and minimal transport from urban areas.

Figure A-2-5 shows the distribution of all FRM SSI PM10 measurements from the Indio air monitoring station alone, from January 1990 through June 2008. The plotted concentrations for Indio are considered statistical outliers. Concentration above the 97.5 percentile value (132 $\mu g/m^3$ and above) are outside the normal range of the data. Therefore any value that exceeds the 24-hour federal PM10 standard of 150 $\mu g/m^3$ is clearly outside the normal range of data for Indio.



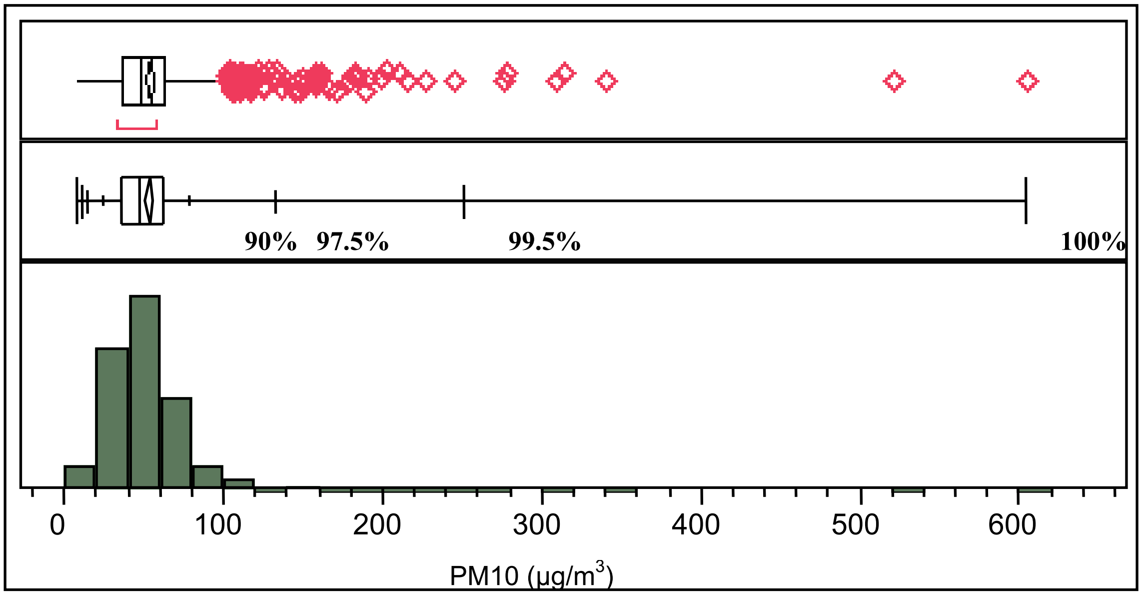
Quantiles		PM10 (µg/m^3)
100.0%	maximum	604.00
99.5%		208.96
97.5%		108.00
90.0%		70.00
75.0%	quartile	53.00
50.0%	median	38.00
25.0%	quartile	26.00
10.0%		16.00
2.5%		9.00
0.5%		6.12
0.0%	minimum	4.00

Moments	PM10 (µg/m^3)
Mean	43.331426
Std Dev	32.76256
Std Err Mean	0.6398254
upper 95% Mean	44.586041
lower 95% Mean	42.076812
N	2622

FIGURE A-2-4

Distribution of SSI PM10 Concentrations at Indio and Palm Springs from January 1990 through June 2008

(Diamond and plus sign symbols show statistically outlying PM10 concentrations for Indio and Palm Springs, respectively.)



Quantiles		PM10 (µg/m³)
100.0%	maximum	604.00
99.5%		251.20
97.5%		132.00
90.0%		79.00
75.0%	quartile	62.00
50.0%	median	48.00
25.0%	quartile	36.00
10.0%		25.00
2.5%		15.00
0.5%		11.00
0.0%	minimum	8.00

Moments	PM10 (µg/m³)
Mean	53.130853
Std Dev	35.479182
Std Err Mean	0.8985672
upper 95% Mean	54.893382
lower 95% Mean	51.368325
N	1559

FIGURE 1-5

Distribution of SSI PM10 Concentrations at Indio from January 1990 through June 2008

(Diamond symbols show statistically outlying Indio PM10 concentrations.)

ATTACHMENT - 3

Preliminary 2007 Continuous Monitoring Summary Data

Table A-3-1

Preliminary* 2007 Indio BAM Continuous 24-Hour Average
PM10 Monitoring Data** ($\mu g/m^3$)
Daily Concentrations Exceeding the Federal Standard (150 $\mu g/m^3$) are in Bold Type

Day	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
1	37	21	39	31	56	58	30	44	23	52	36	
2	18	40	117	44	73	44	48	59	141	25	19	19
3	37	37	25	33	89	34	57	43	27	34	20	67
4	63	36	28	48	128	47	70	41	69	55	30	34
5	**193**	50	41		33	95	49	89	53	77	54	36
6	28	56	56		12	144	56	46	33	14	51	31
7	20	57	49		60	32	74	43	40	13	44	50
8	25	55	45		22	46	60	34		22	47	8
9	42	69	41		33	41	44	41		31	45	7
10	49	45	28		31	35	47	47		33	26	25
11	37	53	19	76	58	40	44	35		32	27	11
12	17	41	44	91	42	51	57	33		121	20	21
13	20	26	52	29	37	75	47	56	33	35	34	20
14	23	39	47	38	43	60	32	93	33	17	32	25
15	14	26	76	17	44	74	31	59	33	26	33	21
16	30	33	46	17	46	97	48	48	57	176	43	20
17	36	34	32	33	50	37	45	49	40	125	37	26
18	18	24	53	63	42	47	56	28	58	35	34	34
19	33	17	51	26	38	43	72	42	36	39	44	36
20	24	31	59	17	31	62	63	52	21	59	60	28
21	65	35	25	15	47	40	38	66	15	51	29	23
22	18	59	76	22	46	60	44	54	16	13	28	20
23	61	34	23	14	42	47	45	46	13	27	27	23
24	46	32	29	37	31	36	138	37	19	42	32	29
25	33	72	30	32	41	46	47	114	28	49	29	50
26	34	147	53	27	38	54	41	30	32	66	43	30
27	37	127	143	39	35	41	49	23	37	55	40	28
28	36	36	20	36	45	42	54	24	60	39	26	27
29	31		27	44	44	48	30	30	41	43	35	24
30	23		31	44	45	35	39	39	61	32	25	27
31	17		32		64		47	66		54		20
Max	193	147	143	91	128	144	138	114	141	176	60	67
Days/Mth	31	28	31	24	31	30	31	31	25	31	30	30
Days/Qtr			90			85			87			91

* Data is preliminary and has not been certified or submitted to AQS
** Day required 18 hours of valid data

Table A-3-2

Preliminary* 2007 Palm Springs BAM Continuous 24-Hour Average
PM10 Monitoring Data** ($\mu g/m^3$)
Daily Concentrations Exceeding the Federal Standard (150 $\mu g/m^3$) are in Bold Type

Day	Month											
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	20	18	14	26	42	44	29	71	27	39	28	23
2	13	24	13	24	115	46	44	53	130	25	18	14
3	15	19	12	23	99	34	33	40	42	22	15	15
4	24	14	12	36	**214**	31	34	48	**155**	39	17	21
5	122	17	17	43	21	92	43	44	41	73	31	25
6	17	17	27	83	11	118	46	32	30	12	39	42
7	10	27	23	54	14	27	52	36	32	11	45	52
8	10	21	25	67	19	35	50	31	27	16	56	12
9	20	25	30	42	28	39	39	35	29	22	60	9
10	32	27	24	33	27	34	40	39	28	22	23	12
11	28	25	12	102	48	39	36	44	21	22	27	9
12	15	14	19	138	37	94	28	27	24	83	14	11
13	13	16	26	28	38	44	31	26	23	20	21	11
14	12	12	28	22	37	36	37	80	25	31	16	20
15	10	13	31	16	49	39	31	38	19	25	15	14
16	15	14	28	21	44	36	44	31	44	58	25	11
17	15	13	29	29	40	36	37	46	42	73	25	19
18	13	17	39	89	44	29	38	29	36	28	20	32
19	20	12	35	22	38	26	28	29	36	23	22	21
20	22	16	57	18	37	53	53	64	18	28	25	28
21	30	28	15	19	45	54	65	36	65	40	16	13
22	16	18	22	26	36	45	37	35	16	10	23	14
23	17	47	18	18	30	41	38	46	20	15	26	14
24	19	13	42	21	26	43	112	47	20	17	18	16
25	17	33	28	17	35	33	38	98	15	34	16	37
26	20	50	34	25	35	32	53	42	18	64	26	17
27	30	51	83	26	30	37	42	25	37	48	34	19
28	16	30	19	26	29	33	35	20	47	23	15	15
29	19		25	42	33	40	36	18	26	28	20	22
30	11		22	35	42	33	36	68	24	26	22	27
31	13		24		56		45	25		28		13
Max	**122**	**51**	**83**	**138**	**214**	**118**	**112**	**98**	**155**	**83**	**60**	**52**
Days/Mth	**31**	**28**	**31**	**30**	**31**	**30**	**31**	**31**	**30**	**31**	**30**	**31**
Days/Qtr			**90**			**91**			**92**			**92**

* Data is preliminary and has not been certified or submitted to AQS
** Day required 18 hours of valid data

ATTACHMENT - 4

UPDATED COACHELLA VALLEY PM10 MODELING ATTAINMENT DEMONSTRATION

Introduction

This attachment discusses the following:
_ A summary of previous Coachella Valley PM10 modeling; and
_ The updated modeling attainment demonstration.

Previous Coachella Valley PM10 Modeling

The 2003 CVSIP and the 1996 Coachella Valley Plan both provided modeling attainment demonstrations for future year PM10. The modeling attainment demonstrations incorporated the results of local field studies to acquire chemical speciation PM10 samples with receptor modeling to apportion the varying components of the PM10 species to source categories, regional urban airshed modeling to determine transport to the Coachella Valley and finally emissions rollback modeling to estimate future year PM10 by source category. A comprehensive discussion of the modeling attainment procedures and background is provided in Chapter 4 of the 1996 CVSIP. The following discussion briefly outlines the modeling procedure used in the the 1996 and 2003 CVSIP PM10 attainment demonstrations.

Receptor Modeling and Source Apportionment

PM10 is a multicomponent pollutant including directly emitted primary particles and secondary particles resulting from the chemical transformations of the precursor emissions, such as hydrocarbons, nitrogen oxides, and sulfur oxides. The receptor model used for source apportionment in the Coachella Valley is known as the Chemical Mass Balance (CMB) Model. This U.S. EPA-approved method matches the measured chemical components of the PM10 samples with known chemical profiles, or signatures, of individual sources of PM10 particles. AQMD staff has collected a library of chemical profiles for more than 170 sources of PM10 emissions. AQMD staff also conducted special 1989 field studies (SCAQMD, 1990) to obtain the chemical speciation of ambient PM10 data at two receptor sites in the Coachella Valley: Palm Springs and Indio. The CMB receptor model was applied to Coachella Valley PM10 concentrations measured at Palm Springs and Indio (Kim, et. al., 1992).

Receptor modeling is a technique for determining the emission sources and the accompanying contributions to ambient PM10 air quality at specific receptor sites. Unlike complex mathematical models that require detailed simulations of physics, chemistry, meteorology, and other processes, receptor models are relatively simple statistical models that require only the availability of measurement data. Using receptor models, emission sources can be identified and quantified. With this information, future-year PM10 air quality can be estimated from the emission rollback methodology. The CMB analysis was corroborated and augmented by a Principal Component Analysis.

24-Hour PM10 Profile

Table A-4-1 shows the CMB model estimated source contributions at Indio for the peak 24-hour PM10 day: 198 $\mu g/m^3$ measured on August 14, 1989. Geological sources accounted that 76 percent of the PM10 concentration and secondary sources 11 percent of the mass. Vegetative burning and motor vehicle source contributed 8 and 3 percent to the mass, respectively. The Coachella Valley study confirmed that soil dust was the dominant component of PM10 in the desert.

The 1996 CVSIP chose 1995 as the base year for evaluation with a 24-Hour average PM10 design value of 133 $\mu g/m^3$. The source contributions were estimated using a proportionality approach that involved multiplying the fractions of the 1989 source contributions, as estimated by the CMB model, to the 1995 24-hour design value. The analysis presumed that the 1989 source contribution applied in 1995 and in future years. In addition, source contributions from the fugitive dust category were divided into five sub-categories based on the 1995 emissions contribution for each of the fugitive dust sources. Source contribution from the transport source category is the amount of PM10 transported from the Basin. This analysis presumed that all secondary particles (such as ammonium, nitrate, and sulfate) were a result of transport from the Basin. In addition, a portion of the motor vehicle contribution was assumed to be a result of transport from the Basin. Since the emissions inventory indicated that motor vehicle sources in the Coachella Valley account for 3.1 percent of the PM10 emissions, the motor vehicle contribution above the 3.1 percent level was attributed to transport.

Table A-4-2 summarizes the fractional contributions of each emissions source category allocated to the 1995 PM10 design value. The 1996 CVSIP estimated future-year PM10 using a linear rollback approach for each primary source (such as mobile, fugitive dust, vegetative burning, and other sources). This involved multiplying the ratio of future to base-year emissions to the base-year source contributions. In the linear rollback approach, it is presumed that future-year PM10 contributions from each source category are a linear function of emission rates for each source category. Future-year annual average transported secondary PM10 levels were estimated by an annual PM10 model. The transported motor vehicle source contribution was estimated by a linear rollback using South Coast Air Basin motor vehicle PM10 emissions.

Table A-4-1

Estimated Source Contributions for August 14, 1989 at Indio

Component	Concentration ($\mu g/m^3$)	Percent of Total Mass
Ammonium Sulfate	9.3	4.7
Ammonium Nitrate	11.5	5.8
Motor Vehicle	6.4	3.2
Geological	150.8	76.2
Vegetative Burning	15.8	8.0
Other	4.2	2.1
Total	198.0	100.0

Table A-4-2

Allocation of Source Contributions for Attainment Demonstration

Component	1995 Design Concentration ($\mu g/m^3$)	Percent of Design Value
Background	3.0	2.3
Transport	14.2	10.7
Mobile	3.6	2.7
Fugitive Dust	0	0
Construction	2.7	2.0
Paved Roads	15.8	11.9
Unpaved Roads	11.6	8.7
Agriculture	2.2	1.7
Windblown	66.7	50.2
Vegetative Burning	10.4	7.8
Other	2.8	2.1
Total	133*	100*

***With rounding**

Updated Coachella Valley PM10 Attainment Modeling

The PM10 modeling attainment demonstration provided in the attached proposed Maintenance Plan differs from the previous CVSIPs in three primary areas: First, the updated analysis uses the 2007 AQMP emissions inventory and SCAG's 2007 Interim and 2008 Final TP planning assumptions as the basis for future year PM10 projections. Second, 2002 was selected as the base year for the analysis to be consistent with the 2007 AQMP. Finally, PM10 transport to the Coachella Valley is determined from the 2007 AQMP Basin PM2.5 and PM10 baseline modeling attainment demonstrations.

Updated PM10 Attainment Modeling Inventories

Table A-4-3 provides the 2007 AQMP updated the Coachella Valley PM10 baseline emissions modeling inventory for the 2002 base-year, 2006, 2010, 2011, 2012, 2014, 2020 2023 and 2030. The annual average day baseline emissions are provided for all PM10 categories with the addition of an estimated maximum day fugitive windblown dust. Windblown dust emissions for the high-wind condition that leads to the 24-hour maximum PM10 concentration were calculated based on the algorithm outlined in the 1990 CVSIP (SCAQMD, 1990). On extreme high-wind days, the windblown dust inventory was estimated to equal 20 percent of the annual total wind blown dust emissions. The 2002 annual average day Coachella Valley fugitive PM10 windblown dust emissions were set at 1.68 TPD. Using the 1990 CVSIP algorithm, the extreme high-wind day inventory is 122.64 TPD (1.68 TPD X 356 days X 0.20 per high-wind day). Growth in the Coachella Valley is expected to reduce the annual average day fugitive PM10 windblown dust emissions to 1.41 TPD by 2030. The windblown dust emissions for the high-wind conditions that lead to the 24-hour maximum PM10 concentration for 2006 through 2030 reflect the reductions in the annual average day fugitive PM10 windblown dust emissions.

As part of the Interagency Consultation process, SCAG (personal communications with Dr. Arnold Sherwood) requested that additional emissions be added to two categories of the 2007 AQMP baseline emissions to make the emissions inventory values consistent with those presented in the Final 2008 RTP. The categories include: (1) entrained paved road dust and (2) on-road mobile sources. The adjustments included 0.3 and 0.9 TPD PM10 to the entrained paved road dust category in 2020 and 2030 respectively and 0.1 and 0.3 TPD to the on-road mobile source categories in 2020 and 2030 respectively. For modeling demonstration purposes, supplemental emissions added to each category for 2023 are interpolated from 2020 and 2030.

TABLE A-4-3

Coachella Valley 2007 AQMP Annual Average Day Baseline
PM10 Emission Inventory (TPD)

SUBCATEGORY	2002	2006	2010	2011	2012	2014	2020	2023	2030
Stationary-Point Sources	0.1	0.2	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Construction/Demolition	6.1	7.9	10	10.5	11	11.9	14.1	15.3	18.1
Entrained Road Dust/Paved	2.8	2.8	3	2.9	2.9	2.9	3.1	3.1	3.3
Entrained Road Dust/Unpaved	2.3	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
Farming Operations	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.3
Fugitive Windblown Dust	1.68	1.45	1.44	1.44	1.44	1.43	1.42	1.42	1.41
Other Area Sources	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8	0.9
On-Road Mobile Sources	2	2	1.7	1.6	1.5	1.4	1.2	1.1	1.2
Off-Road Mobile Sources	0.5	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.4
Total PM10 Emissions	16.4	17.8	19.7	20.0	20.5	21.3	23.5	24.7	27.9
Maximum Day Fugitive Windblown Dust[1]	122.6	105.9	105.1	105.1	105.1	104.4	103.7	103.7	102.9
Maximum Day Total PM10 Emissions	137.3	122.2	123.4	123.7	124.2	124.3	125.7	126.9	129.4
Supplemental Entrained Road Dust/Paved[2]	N/A	N/A	N/A	N/A	N/A	N/A	0.3	0.5*	0.9
Supplemental On-Road Mobile Sources[2]	N/A	N/A	N/A	N/A	N/A	N/A	0.1	0.2*	0.3
Total PM10 with Supplemental Emissions	16.4	17.8	19.7	20.0	20.5	21.3	23.9	25.4	29.1
Maximum Day PM10 with Supplemental Emissions	137.3	122.2	123.4	123.7	124.2	124.3	126.1	127.6	130.6

3 As in the 2003 CVSIP attainment demonstration, the 24-hr maximum PM10 emissions from fugitive windblown dust during a high-wind event represents 20 percent of the total annual emissions in the category.

4 Supplemental adjustments to the 2007 AQMP baseline inventory to make consistent with the 2008 RTP.

* Interpolated from 2020 and 2030 values.

Updated Design Value

Contrary to ozone and PM2.5, which have a concentration based design value, the current form of the PM10 standard relies on a 3-year average exceedance based design value. The modeling attainment demonstrations from the previous CVSIP's relied on a concentration based design value to anchor the estimation of future PM10 concentrations. This updated attainment demonstration used the 2002 maximum 24-hour average PM10 concentration (excluding confirmed natural events) of 139 $\mu g/m^3$ (measured at Indio) as a surrogate for a concentration based design value. The 2002 value is 2.0 $\mu g/m^3$ greater than the three-year average of the maximum PM10 concentrations (137 $\mu g/m^3$) observed at Indio between 2000-2002 and 2.0 $\mu g/m^3$ less than the peak of 141 $\mu g/m^3$ observed in 2001 in the 3-year period.

Modeling Attainment and Modeling Conformity Demonstration

The updated modeling attainment demonstration followed the same general procedure described in the EPA approved 2003 CVSIP and previous analyses. Linear rollback for each primary source (such as mobile, fugitive dust, vegetative burning, and other sources) involved multiplying the ratio of future to base-year emissions to the base-year source contributions. The attainment demonstration are provided for the maximum day total baseline PM10 emission and for the scenario including the supplemental emissions to the entrained paved road dust and on-road mobile source emissions categories. The latter attainment demonstration represents the impact of the proposed mobile source transportation conformity budget assumptions in 2020 and 2030.

This analysis used the Indio 2002 design value of 139 $\mu g/m^3$ and the CMB derived source apportionment (Table A-4-2) to distribute the base-year PM10 contributions from each source category. The 2006 annual average transported PM10 was held at the 2002 level (14.8 $\mu g/m^3$). Estimated Basin transport to the Coachella Valley in 2010 through 2014 is reduced to 13.7 $\mu g/m^3$ based on the predicted reduction in South Coast Air Basin (Basin) PM10 due to changes in the baseline emissions. Transport to the Coachella Valley based on Basin baseline PM10 simulations increases to 14.0 $\mu g/m^3$ in 2020 and 2023 and 14.7 $\mu g/m^3$ in 2030.

Table A-4-4 summarizes the results of the PM10 modeling analyses including the updated attainment demonstration for the Coachella Valley for the maintenance period 2010, 2011, 2012, 2014, 2020, 2023 and 2030. Table A-4-4 also presents the modeling conformity demonstration for 2010, 2020, 2023 and 2030. PM10 concentrations are predicted to continue to meet the federal standard of 150 $\mu g/m^3$ in all years of the analysis. The 2006 predicted 24-hour maximum PM10 of 129.2

μg/m^3 is approximately 86 percent of the federal standard. The simulated 2006 PM10 24-hour concentration was approximately six (6) percent higher than the peak concentration of 122 μg/m^3 observed that year at Indio. Predicted 24-hour maximum PM10 increase from 130 μg/m^3 in 2010 at the beginning of the maintenance period to just under 136 μg/m^3 in 2030.

PM10 predicted 24-hour maximum concentrations with the conformity emissions for 2020 through 2030 range from 2 to 6 μg/m^3 higher than those estimated for the baseline emissions scenario. The predicted 2010 maximum 24-hour PM10 conformity attainment concentration (130 μg/m^3) used the baseline emissions inventory. Predicted maximum 24-hour PM10 conformity attainment concentrations for 2020, 2023 and 2023 valued 134, 136 and 142 μg/m^3 respectively. PM10 concentrations calculated for the conformity emissions are predicted to continue to meet the federal standard of 150 μg/m^3 in all years of the analysis.

Summary

This analysis updates the Coachella Valley 24-hour PM10 attainment demonstration previously approved by U.S. EPA using the 2007 AQMP baseline emissions inventory that incorporated CARB's EMFAC2007 mobile source inventory, SCAG's latest planning assumptions including the 2007 Interim RTP and 2008 Final RTP, and revised estimates on PM10 transport from the Basin. The updated modeling attainment demonstration indicated that the modeled 24-hour average PM10 concentrations would meet the federal standard in all years including 2002 through 2030. The analysis also demonstrated that PM10 concentrations during the maintenance period using the transportation conformity budget emission would continue to meet the federal standard.

TABLE A-4-4

PM10 Emissions, Observed and Model-Predicted Concentrations

	2002		2006		2010	
Source	Baseline	Observed	Baseline	Predicted	Baseline - Conformity	Predicted
Category	Emissions	PM10	Emissions	PM10	Emissions	PM10
	(TPD)	ug/m3	(TPD)	ug/m3	(TPD)	ug/m3
Background		3.1		3.1		3.1
Transport from Basin		14.8		14.8		13.7
Mobile	2.5	3.8	2.5	3.8	2.2	3.3
Construction & Demolition	6.1	2.8	7.9	3.7	10.0	4.6
Entrained Road Dust/Paved	2.8	16.5	2.8	16.5	3.0	17.6
Entrained Road Dust/Unpaved	2.3	12.1	1.9	10.3	1.9	10.2
Farming Operations	0.4	2.3	0.4	2.3	0.4	2.2
Windblown Dust	122.6	69.7	105.9	60.2	105.1	59.8
Waste Burning and Disposal	0.1	10.9	0.1	10.9	0.1	10.9
Others	0.5	2.9	0.7	3.7	0.8	4.3
Predicted PM10		**139.0**		**129.2**		**129.7**
	2011		2012		2014	
Source	Baseline	Predicted	Baseline	Predicted	Baseline	Predicted
Category	Emissions	PM10	Emissions	PM10	Emissions	PM10
	(TPD)	ug/m3	(TPD)	ug/m3	(TPD)	ug/m3
Background		3.1		3.1		3.1
Transport from Basin		13.7		13.7		13.7
Mobile	2.1	3.1	2.0	3.0	1.8	2.7
Construction & Demolition	10.5	4.9	11.0	5.1	11.9	5.5
Entrained Road Dust/Paved	2.9	16.9	2.9	17.0	2.9	17.3
Entrained Road Dust/Unpaved	1.9	10.2	1.9	10.2	1.9	10.2
Farming Operations	0.4	2.2	0.4	2.2	0.4	2.2
Windblown Dust	105.1	59.8	105.1	59.8	104.4	59.3
Waste Burning and Disposal	0.1	10.9	0.1	10.9	0.1	10.9
Others	0.8	4.4	0.8	4.6	0.9	4.9
Predicted PM10		**129.1**		**129.5**		**129.8**

TABLE A-4-4 (Continued)

PM10 Emissions, Observed and Model-Predicted Concentrations

Source	2020		2023		2030	
Category	Baseline	Predicted	Baseline	Predicted	Baseline	Predicted
	Emissions	PM10	Emissions	PM10	Emissions	PM10
	(TPD)	ug/m3	(TPD)	ug/m3	(TPD)	ug/m3
Background		3.1		3.1		3.1
Transport from Basin		14.0		14.0		14.7
Mobile	1.5	2.3	1.5	2.3	1.6	2.4
Construction & Demolition	14.1	6.5	15.3	7.1	18.1	8.4
Entrained Road Dust/Paved	3.1	18.0	3.1	18.4	3.3	19.3
Entrained Road Dust/Unpaved	1.9	10.2	1.9	10.2	1.9	10.2
Farming Operations	0.4	2.1	0.4	2.1	0.3	2.0
Windblown Dust	103.7	58.9	103.7	58.9	102.9	58.5
Waste Burning and Disposal	0.1	10.9	0.1	10.9	0.1	10.9
Others	1.0	5.4	1.1	5.7	1.2	6.7
Predicted PM10		**131.5**		**132.6**		**136.1**
	2020		2023		2030	
Source	Conformity	Predicted	Conformity	Predicted	Conformity	Predicted
Category	Emissions	PM10	Emissions	PM10	Emissions	PM10
	(TPD)	ug/m3	(TPD)	ug/m3	(TPD)	ug/m3
Background		3.1		3.1		3.1
Transport from Basin		14.0		14.0		14.7
Mobile	1.7	2.5	1.7	2.6	1.9	2.9
Construction & Demolition	14.1	6.5	15.3	7.1	18.1	8.4
Entrained Road Dust/Paved	3.4	20.0	3.6	21.4	4.2	24.7
Entrained Road Dust/Unpaved	1.9	10.2	1.9	10.2	1.9	10.2
Farming Operations	0.4	2.1	0.4	2.1	0.3	2.0
Windblown Dust	103.7	58.9	103.7	58.9	102.9	58.5
Waste Burning and Disposal	0.1	10.9	0.1	10.9	0.1	10.9
Others	1.0	5.4	1.1	5.7	1.2	6.7
Predicted PM10		**133.7**		**136.0**		**142.0**

ATTACHMENT -5

U.S. EPA Approval of the Coachella Valley PM10 State Implementation Plan

Federal Register Environmental Documents

- Approval and Promulgation of State Implementation Plans for Air Quality Planning Purposes; California--South Coast and Coachella

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APPROVAL AND PROMULGATION OF STATE IMPLEMENTATION PLANS FOR AIR QUALITY PLANNING PURPOSES; CALIFORNIA--SOUTH COAST AND COACHELLA

[Federal Register: November 14, 2005 (Volume 70, Number 218)]
[Rules and Regulations]
[Page 69081-69085]
From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr14no05-20]

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ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 52
[CA-314-0483; FRL-7975-7]

Approval and Promulgation of State Implementation Plans for Air
Quality Planning Purposes; California--South Coast and Coachella

AGENCY: Environmental Protection Agency (EPA).
ACTION: Final rule.

SUMMARY: EPA is taking final action to approve state implementation plan (SIP) revisions submitted by the State of California to provide for attainment of the particulate matter (PM-10) national ambient air quality standards (NAAQS) in the Los Angeles-South Coast Air Basin and the Coachella Valley Area, and to establish emissions budgets for these areas for purposes of transportation conformity. EPA is also approving revisions to fugitive dust regulations and ordinances for the areas. EPA is approving these SIP revisions under provisions of the Clean Air Act (CAA) regarding EPA action on SIP submittals, SIPs for national primary and secondary ambient air quality standards, and plan requirements for nonattainment areas.

DATES: This rule is effective on December 14, 2005.

ADDRESSES: You can inspect copies of the docket for this action at EPA's Region IX office during normal business hours by appointment at the following location: EPA Region IX, 75 Hawthorne Street, San Francisco, CA 94105-3901. A reasonable fee may be charged for copying parts of the docket.

Copies of the SIP materials are also available for inspection at the following locations: California Air Resources Board, 1001 I Street, Sacramento, California, 95812. South Coast Air Quality Management District, 21865 E. Copley Drive, Diamond Bar, California, 91765.

The 2003 Air Quality Management Plan, which includes the South Coast PM10 plan, is electronically available at:
http://www.aqmd.gov/aqmp/AQMD03AQMP.htm EXIT Disclaimer

The 2003 Coachella Valley PM10 State Implementation Plan is at:
http://www.aqmd.gov/aqmp/docs/f2003cvsip.pdf EXIT Disclaimer

The fugitive dust rules are at:
http://www.aqmd.gov/rules/rulesreg.html EXIT Disclaimer

FOR FURTHER INFORMATION CONTACT: Dave Jesson, EPA Region IX, at (415) 972-3957, or jesson.david@epa.gov.

SUPPLEMENTARY INFORMATION: Throughout this document, ``we,'' ``us,'' and ``our'' refer to EPA.

Table of Contents

I. Summary of Proposed Action

On July 28, 2005 (70 FR 43663), we proposed to approve 2003 plan amendments for the South Coast Air Basin (or ``South Coast''), as the plan amendments pertain to attainment of the 24-hour and annual PM-10 NAAQS.\1\ We also proposed to approve revisions to the PM-10 plan for the Coachella Valley Planning Area (``Coachella Valley'').\2\ We proposed to approve the plans'' PM-10 motor vehicle emissions budgets for purposes of transportation conformity. Finally, we proposed to approve revisions to Rules 403, 403.1, and 1186 of the South

Coast Air Quality Management District (SCAQMD) regulating fugitive dust emissions, and revised fugitive dust ordinances for Coachella Valley jurisdictions. These revisions update, improve, strengthen, and supplement the approved SIP provisions for control of PM-10 and PM-10 precursors in the two areas.

\1\ The nonattainment area includes all of Orange County and the more populated portions of Los Angeles, San Bernardino, and Riverside Counties. For a description of the boundaries of the Los Angeles-South Coast Air Basin Area, see 40 CFR 81.305.

\2\ The Coachella Valley Planning Area is in central Riverside County in the Salton Sea Air Basin. The boundary is defined at 40 CFR 81.305.

Our proposal was based on the following SIP submittals by the State of California:

(1) That portion of the 2003 South Coast Air Quality Management Plan (``2003 South Coast AQMP''), including motor vehicle emissions budgets, adopted by the SCAQMD on August 1, 2003, and submitted to us

on January 9, 2004, that pertains to PM-10;

(2) the 2003 Coachella Valley PM10 State Implementation Plan (``2003 Coachella Valley Plan''), including motor vehicle emissions budgets, adopted by the SCAQMD on August 1, 2003, and submitted to us on January 9, 2004;

(3) revisions to Rules 403, 403.1, and 1186, adopted by SCAQMD on April 2, 2004, and submitted by CARB on July 29, 2004;

(4) revisions to the implementation handbooks for Rules 403 and 403.1, adopted by SCAQMD on April 2, 2004, and submitted by CARB on November 16, 2004; and

(5) revised Coachella Valley ordinances, which were adopted by the local jurisdictions on various dates in 2003 and 2004, and submitted by CARB on November 16, 2004.

Our proposal contains detailed information on these SIP submittals and our evaluation of the submittals against applicable CAA provisions and EPA policies relating to serious area PM-10 SIPs.

II. Public Comments

We received two public comments. The first comment was from SCAQMD (e-mail from Jill Whynot, dated August 26, 2005), requesting that we annotate Table 1 (``South Coast PM-10 Control Measures''), with a footnote updating information on certain of the measures, and Table 2 (``South Coast Emission Reduction Commitments), with a footnote providing an update on the implementation of measure CMB-07. We have inserted new footnote 3 in Table 1 and new footnote 1 in Table 2, below, as requested by SCAQMD.

With respect to the note on Table 1, the SCAQMD referenced material provided on Agenda Item #39 for the December 3, 2004 Governing Board meeting.\3\ The PRC-03 emission reduction commitment for under-fired charbroilers was projected to be 0.2 tons per day (tpd) of PM-10 by 2006 and 1.0 tpd by 2010. Substitute reductions come from the implementation of Rules 1186 and 403. The reductions in excess of the AQMP commitment are estimated to be 0.7 tpd starting in 2005 for Rule 403 and 0.28 tpd for Rule 1186 starting in 2006, for a total of 0.98 tpd of PM-10. With growth factors applied, the reduction is estimated to be 1.04 tpd of PM-10 in 2010. Emission reductions from these two rules are not counted in the 2003 South Coast AQMP, and thus 0.28 tpd in 2006 and 1.0 tpd of PM-10 reductions in 2010 may be substituted for the SIP commitment for PRC-03. This ensures that the plan will continue to meet the requirements for reasonable further progress and attainment.

\3\ This supplemental information is incorporated in the Docket for this rulemaking and it is also available electronically at: http://www.aqmd.gov/hb/2004/041239a.html EXIT Disclaimer

Table 1.--South Coast PM-10 Control Measures
[Source: South Coast 2003 AQMP, Appendix IV-A]

Control measure No.	Control measure title	2006 reduction target in tons per day
Remaining 2002 SIP Control Measures		
CMB-07	Emission Reductions from Petroleum Refinery Flares (SOx).	2.1
CMB-09 \1\	Petroleum Refinery Fluid Catalytic Cracking Units (PM-10, NH3).	0.1, 0
WST-01 \1\	Emission Reductions from Livestock Waste (VOC, NH3).	4.2, 8.7
WST-02 \1\	Emission Reductions from Composting (VOC, NH3).	1.2, 1.9
PRC-03 (P2)	Emission Reductions from Restaurant Operations (PM-10) \3\.	0.2
New Control Measures		
BCM-07 \1\	Further PM10 Reductions from Fugitive Dust Sources (PM-10).	TBD
BCM-08 \1\	Further Emission Reductions from Aggregate and Cement Manufacturing	0.6

	Operations (PM-10).	
MSC-04	Miscellaneous Ammonia Sources (NH3).	TBD
MSC-06	Wood-Burning Fireplaces and Wood Stoves (PM-10).	TBD
TCB-01 \2\	Transportation Conformity Backstop Measure (PM-10).	0

\1\ These measures have already been adopted by SCAQMD. Revisions to Rules 403 and 1186 fulfill BCM-07; new Rule 1127 (Emission Reductions from Livestock Waste, adopted 8/6/04) addresses WST-01; new Rule 1133.2 (Emission Reductions from Co-Composting Operations, adopted 1/10/03) responds to WST-02 commitments; new Rule 1105.1 (Reduction of PM-10 and Ammonia Emissions from Fluid Catalytic Cracking Units, adopted 11/7/03) meets the CMB-09 commitment; and new Rule 1157 (PM-10 Emissions Reductions from Aggregate and Related Operations, adopted 1/07/05) fulfills the BCM-08 commitment.

\2\ This measure, which is intended to achieve reductions in PM-10 after the 2006 attainment date, is discussed below and in Section II.G., Motor Vehicle Emission Budgets.

\3\ In December 2004, the SCAQMD Governing Board made a finding at a public hearing that further reductions for this category were infeasible at this time. Emission reductions from Rules 403--Fugitive Dust, and 1186--PM-10 Emissions from Paved and Unpaved Roads, and Livestock Operations, were substituted for the emission reduction commitments for PRC-03.

[[Page 69083]]

Table 2.--South Coast Emission Reduction Commitments--Commitments To Adopt and Implement New Measures To Achieve Emission Reductions in Tons per Day From 2010 Planning Inventory
[Source: South Coast 2003 AQMP, Table 4-8A]

Year	VOC		PM-10		NOX		SOX\1\	
	Adopt	Impl	Adopt	Impl	Adopt	Impl	Adopt	Impl
2004	2.0	0	1.7	0	3.0	0	2.1	0
2005	2.0	0	0	0.16	2.1	0	0	2.1

2006	0	4.8	0	0.86	0	0	0	0

\1\ Compliance reports from the current version of Rule 1118--Emissions from Refinery Flares, show that these emission reductions have already been achieved since 2003. Amendments to Rule 1118 currently being developed, and scheduled for consideration by the SCAQMD Governing Board in 2005, would maintain the current reductions and seek additional reductions.

As noted in our proposal, the 2003 Coachella Valley Plan contains no new control measure commitments, but relies on the adopted revisions to Rules 403 and 403.1 and the local ordinances.

The second comment was from CARB (letter from Cynthia Marvin, dated August 29, 2005). CARB pointed out that Table 8 (``Proposed Approvals of South Coast and Coachella Valley PM-10 Attainment Plan Submittals'') contains a typographical error, in referencing contingency measure CTY-04. We have corrected this error in Table 3 (``Approvals of South Coast and Coachella Valley PM-10 Attainment Plan Submittals'') in section III below, by indicating that the approved contingency measure is CTY-14.

CARB also asked that we note that the 2003 South Coast AQMP description of contingency measures CTY-01--Accelerated Implementation of Control Measures, and TCB-01--Transportation Conformity Budget Backstop Measure incorrectly lists CARB as an implementing agency. We have added a new footnote 1 to Table 3 below, to indicate that these two contingency measures do not apply to CARB.

III. EPA Action

In this document, we are finalizing the actions on the submittals referenced above. We are approving revisions to SCAQMD Rules 403 (except for subdivision h), 403.1 (except for subdivision j), and 1186 regulating fugitive dust emissions; revisions to the implementation handbooks for the rules (Rule 403 Implementation Handbook, Chapters 5, 7, and 8; Rule 403 Coachella Valley Agricultural Handbook; Rule 403.1 Implementation Handbook, Chapters 2, 3, 4, and 7); and revisions to the fugitive dust ordinances for 10 Coachella Valley jurisdictions. These revisions update, improve, strengthen, supplement, and replace the SIP provisions for control of PM-10 and PM-10 precursors in the two areas.

We are approving the 2003 plan amendments to the 2002 SIPs for the South Coast and Coachella Valley serious nonattainment areas, as the plan amendments pertain to CAA provisions applicable to attainment SIPs for the 24-hour and annual PM-10 NAAQS. Specifically, we are approving under section 110(k)(3) the PM-10 portions of the 2003 South Coast AQMP and the 2003 Coachella Valley Plan with respect to the CAA requirements for emissions inventories under section 172(c)(3); control measures, as meeting the requirements of sections 110(a), 188(e), and 189(b)(1)(B); reasonable further progress under section 189(c)(1); contingency measures under section 172(c)(9); demonstration of attainment under section 189(b)(1)(A); and motor vehicle emissions budgets under section 176(c)(2)(A).

The South Coast and Coachella Valley budgets are displayed in our proposed approval as tables 6 and 7 respectively, at 70 FR 43672. We have previously determined that these budgets are adequate (see 69 FR 15325, March 25, 2004), following posting of the budgets on EPA's conformity Web site: http://www.epa.gov/otaq/transp/conform/reg9sips.htm.

We show the plan approvals in Table 3--``Approvals of South Coast and Coachella Valley PM-10 Attainment Plan Submittals.''

Table 3.--Approvals of South Coast and Coachella Valley PM-10 Attainment Plan Submittals

CAA Section	Provision	Plan Citation	
		South Coast	Coachella Valley
172(c)(3)	Emission Inventories	2003 South Coast AQMP, Chapter 3 (Tables 3-1A and 3-3A); Appendix III (Tables A-1, A-2, A-3, A-5, and A-7); and Appendix V (Attachment 4).	2003 Coachella Valley Plan, Tables 2-2, 2-3, 2-4, and 2-5.
110(a), 188(e), and 189(b)(1)(B)	Control Measures	Table 1 (derived from 2003 South Coast AQMP, Appendix IV-A) and Table 2 (derived from 2003 South Coast AQMP, Table 4-8A).	No new measures.
172(c)(2), 189(c)(1)	Reasonable Further Progress.	2003 South Coast AQMP, Table 6-1.	Table 5 at 70 FR 43671 (derived from 2003 Coachella Valley Plan, Tables 2-9 and 2-7).
172(c)(9)	Contingency Measures	2003 South Coast AQMP, Appendix IV-A, Section 2 (CTY-01, CTY-14, TCB-	No new measures.

		01)\1\.	
189(b)(1)(A)..........................	Attainment Demonstration.	2003 South Coast AQMP, Chapter 5; Appendix V, Chapter 2.	2003 Coachella Valley Plan, Chapter 3.

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176(c)(2)(A)..........................	Motor Vehicle Emissions Budgets.	Table 6 at 70 FR 43672 (derived from ``2003 South Coast AQMP On-Road Motor Vehicle Emissions Budgets'').	Table 7 at (derived 70 FR 43672 from ``2003 Coachella Valley PM-10 SIP On-Road Motor Vehicle Emissions Budgets'').

\1\ The contingency measures do not contain a commitment by CARB.

IV. Administrative Requirements

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ``significant regulatory action'' and therefore is not subject to review by the Office of Management and Budget. For this reason, this action is also not subject to Executive Order 13211, ``Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001). This action merely approves state law as meeting Federal requirements and imposes no additional requirements beyond those imposed by state law. Accordingly, the Administrator certifies that this rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.). Because this rule approves pre-existing requirements under state law and does not impose any additional enforceable duty beyond that required by state law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4).

This rule also does not have tribal implications because it will not have a substantial direct effect on one or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes, as specified by Executive Order 13175 (59 FR 22951, November 9, 2000). This action also does not have Federalism implications because it does not have substantial direct effects on the

States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This action merely approves a state rule implementing a Federal standard, and does not alter the relationship or the distribution of power and responsibilities established in the Clean Air Act. This rule also is not subject to Executive Order 13045 ``Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because it is not economically significant.

In reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the Clean Air Act. In this context, in the absence of a prior existing requirement for the State to use voluntary consensus standards (VCS), EPA has no authority to disapprove a SIP submission for failure to use VCS. It would thus be inconsistent with applicable law for EPA, when it reviews a SIP submission, to use VCS in place of a SIP submission that otherwise satisfies the provisions of the Clean Air Act. Thus, the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. This rule does not impose an information collection burden under the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.).

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Intergovernmental relations, Nitrogen dioxide, Particulate matter, Reporting and recordkeeping requirements, Volatile organic compounds.

Dated: September 16, 2005.
Laura Yoshii,
Acting Regional Administrator, Region IX.

? Part 52, chapter I, title 40 of the Code of Federal Regulations is amended as follows:

PART 52--[AMENDED]

? 1. The authority citation for part 52 continues to read as follows:

Authority: 42 U.S.C. 7401 et seq.

Subpart F--California

? 2. Section 52.220 is amended by adding paragraphs (c)(333)(i)(A)(2), (c)(339), and (c)(340) to read as follows:

Sec. 52.220 Identification of plan.

* * * * *

(c) * * *

(333) * * *

(i) * * *

(A) * * *

(2) Amended Rules 403 (except for subdivision h), 403.1 (except for subdivision j), and 1186, as adopted on April 2, 2004.

* * * * *

(339) New and amended plans for the following agency were submitted on January 9, 2004, by the Governor's designee.

(i) Incorporation by reference.

(A) South Coast Air Quality Management District (SCAQMD).

(1) South Coast 2003 Air Quality Management Plan (AQMP), as adopted by SCAQMD on August 1, 2003, and by California Air Resources Board on October 23, 2003.

(i) Baseline and projected emissions inventories in AQMP Chapter III Tables 3-1A and 3-3A, in Appendix III Tables A-1, A-2, A-3, A-5, and A-7, and in Appendix V Attachment 4; SCAQMD commitment to adopt and implement control measures CMB-07, CMB-09, WST-01, WST-02, PRC-03, BCM-07, BCM-08, MSC-04, MSC-06, TCB-01 in AQMP Chapter 4 Table 4-8A, and in Appendix IV-A); PM-10 reasonable further progress in AQMP Chapter 6, Table 6-1 and in Appendix V Chapter 2; contingency measures CTY-01, CTY-14, TCB-01 in Appendix IV-A Section 2; PM-10 attainment demonstration in AQMP Chapter 5, and in Appendix V Chapter 2; and motor vehicle emissions budgets in ``2003 South Coast AQMP On-Road Motor Vehicle Emissions Budgets.''

(2) 2003 Coachella Valley PM-10 State Implementation Plan, as adopted by SCAQMD on August 1, 2003, and by California Air Resources Board on October 23, 2003.

(i) Baseline and projected emissions inventories in Tables 2-2, 2-3, 2-4, and 2-5; reasonable further progress in Tables 2-9 and 2-7; attainment demonstration in Chapter 3; and motor vehicle emissions budgets in ``2003 Coachella Valley PM-10 SIP On-Road Motor Vehicle

Emissions Budgets.''
* * * * *
    (340) New and amended rules for the following agencies were submitted on November 16, 2004, by the Governor's designee.

[[Page 69085]]

    (i) Incorporation by reference.
    (A) South Coast Air Quality Management District (SCAQMD).
    (1) Amended Handbooks for Rules 403 (Chapters 5, 7, and 8) and 403.1 (Chapters 2, 3, 4, and 7), as adopted on April 2, 2004.
    (B) Plan revisions for the Coachella Valley Planning Area.
    (1) Fugitive dust control ordinances for: City of Cathedral City Ordinance No. 583 (1/14/04), City of Coachella Ordinance No. 896 (10/8/03), City of Desert Hot Springs Ordinance No. 2003-16 (10/7/03), City of Indian Wells Ordinance No. 545 (11/6/03), City of Indio Ordinance No. 1357 (12/3/03), City of La Quinta Ordinance No. 391 (12/2/03), City of Palm Desert Ordinance No. 1056 (11/13/03), City of Palm Springs Ordinance No. 1639 (11/5/03), City of Rancho Mirage Ordinances No. 855 (12/18/03) and No. 863 (4/29/04), and County of Riverside Ordinance No. 742.1 (1/13/04).

[FR Doc. 05-22463 Filed 11-10-05; 8:45 am]
BILLING CODE 6560-50-P

ATTACHMENT - 6

Draft Analysis of PM10 Air Quality from the Continuous BAM Monitor Operated on the Torres-Martinez Tribal Lands in the Coachella Valley

Background

Beginning in 2007, the Torres-Martinez Tribal Nation established a real-time BAM monitoring site on an unpaved dirt lot with no vegetative ground cover that serves as an access road and parking lot for their Tribal Community Center located in the southern portion of the Coachella Valley. The District has no jurisdiction over the Tribal Nation and did not participate in the selection of the monitoring site. EPA monitoring requirements specified in CFR Part 58 Appendix E, Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring, Section (3), paragraph (a), Spacing From Minor Sources, specifically states that "Particulate matter sites should not be located in an unpaved area unless there is vegetative ground cover year round, so that the impact of windblown dusts will be kept to a minimum." The placement of the Torres-Martinez real-time BAM monitoring site on an unpaved dirt lot with no vegetative ground cover directly conflicts with 40 CFR 58, Appendix E criteria.

The Torres-Martinez PM10 BAM became operational in January 2007 in response to issues pertaining to illegal open burning of refuse on Tribal Lands to the southeast of the Community Center. Through U.S. EPA grant funds, the Torres-Martinez Tribe established the BAM at an ozone monitoring site that was already operational. The siting requirement for an ozone monitor is significantly different than that for a particulate monitor. The primary interference to an ozone site is from sources of VOC (eg., solvents, gasoline…) and vegetation (eg., trees and biogenic VOC). The Community Center site offered good exposure for the ozone monitor. However, the BAM PM10 monitor being sited on a dirt parting lot having no vegetation (anywhere or anytime), exposed the monitor to sources of fugitive dust from traffic driving over the dirt parking lot and dirt roads leading to the Community Center. Ironically, the bulk of the illegal burning ceased at the end of 2006, yet the PM10 sampling continued at the Tribal Community Center. What is also interesting is that the BAM was fitted for PM10 inlet and not PM2.5 which is directly related to combustion impacts.

Analysis of the 2007 Torres-Martinez BAM hourly data shows an overwhelming mobile-source re-entrained unpaved road dust impact from daily travel to the community center over the unpaved roads and unpaved parking lots adjacent to the monitoring site (within a 50 meter radius extending from the monitor). District staff has reviewed the monitor siting and contends that the monitoring location is solely representative of a localized microscale PM10 exposure and as such, the data from the site should not be included in the regional attainment assessment.

The District has not participated in the operation or maintenance of the Torres-Martinez PM10 monitoring equipment. While the tribal authority worked closely with EPA to establish the site, including an initial audit of the monitoring equipment, preliminary data from the monitoring site was only acquired for roughly two thirds (248 days) of 2007. BAM PM10 monitoring failed to meet completeness requirements in the first and fourth quarters of the year. PM10 data was measured on 55 days in the first quarter and 39 in the fourth quarter. The monitor was taken off-line for maintenance and repairs beginning November of 2007 and continued offline through the end of the year.

Torres-Martinez did not file a network plan with EPA for the PM10 BAM or conduct parallel monitoring. Instead the tribe designated the BAM as a Federal Equivalent Monitor (FEM) and submitted a Quality Assurance Project Plan (QAPP) to U.S. EPA. It is unclear as to when U.S. EPA approved the QAPP (documentation was not available through internet queries or District staff's discussion with U.S. EPA staff) however, the preliminary "raw" monitoring data was entered into the AQS.

After a review of the preliminary data, concerns exist about the degree of quality assurance applied to the data and the lack of screening for and flagging of exceptional events. (The 2007 Torres-Martinez hourly PM10 data exhibited a significantly higher standard deviation [103 $\mu g/m^3$] compared with the standard deviations of the District's Palm Springs and Indio hourly BAM data [45 and 54 µg/m3, respectively]). Given the conflict with EPA siting guidance (monitor placement on an unpaved area) and uncertainties associated with the Torres-Martinez PM10 data the District has excluded the 2007 data acquired from the site from the attainment assessment.

The following sections offer supporting evidence that the Torres-Martinez PM10 BAM data should not be considered as part of the request to redesignate the Coachella Valley attainment for PM10.

Monitoring Station Location

The Torres-Martinez monitoring site is located on tribal lands at a community center in the southern-most Riverside County portion of the Coachella Valley. The monitoring site is located approximately 35 miles southeast of the District's Palm Springs monitoring station and 11 miles southeast of the Indio air monitoring station. The locations of the Indio and Torres Martinez monitoring stations are depicted in Figure A-6-1. In general, all three stations are subjected to evening regional transport of PM10 that has originated earlier in the day upwind in the Basin. The evening regional PM10 transport component contributes approximately 11 $\mu g/m^3$ to the daily 24-hour average concentrations at each monitoring site. Figure A-6-2 illustrates the timing of the transport through the Coachella Valley where the Basin generated transport peaks between 7-8 p.m. PST at Palm Springs and 8-9 p.m. at both Indio and Torrez-Martinez.

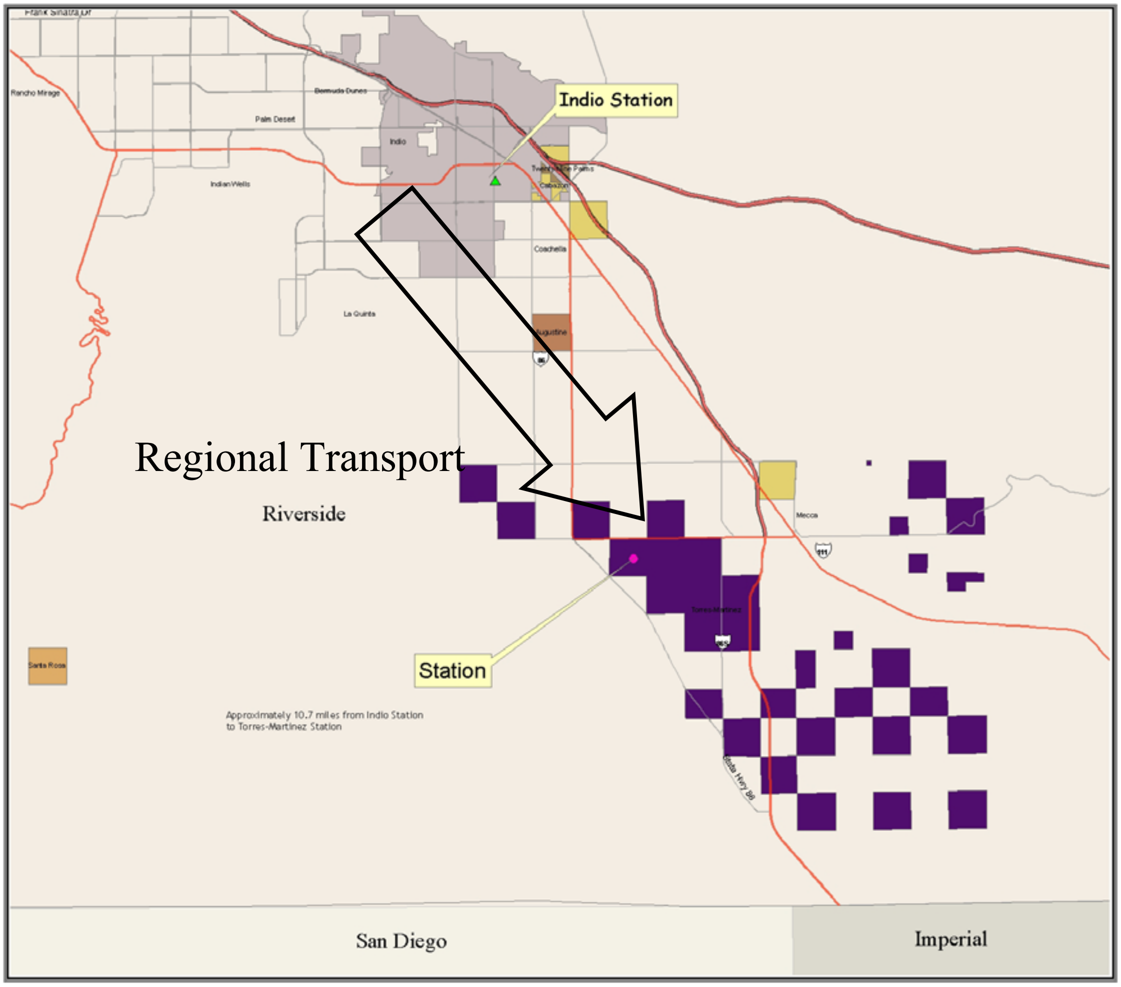


Figure A-6-1

Torres-Martinez Tribal Lands and Air Monitoring Station Location (Station)
Relative to District Indio Monitoring Station

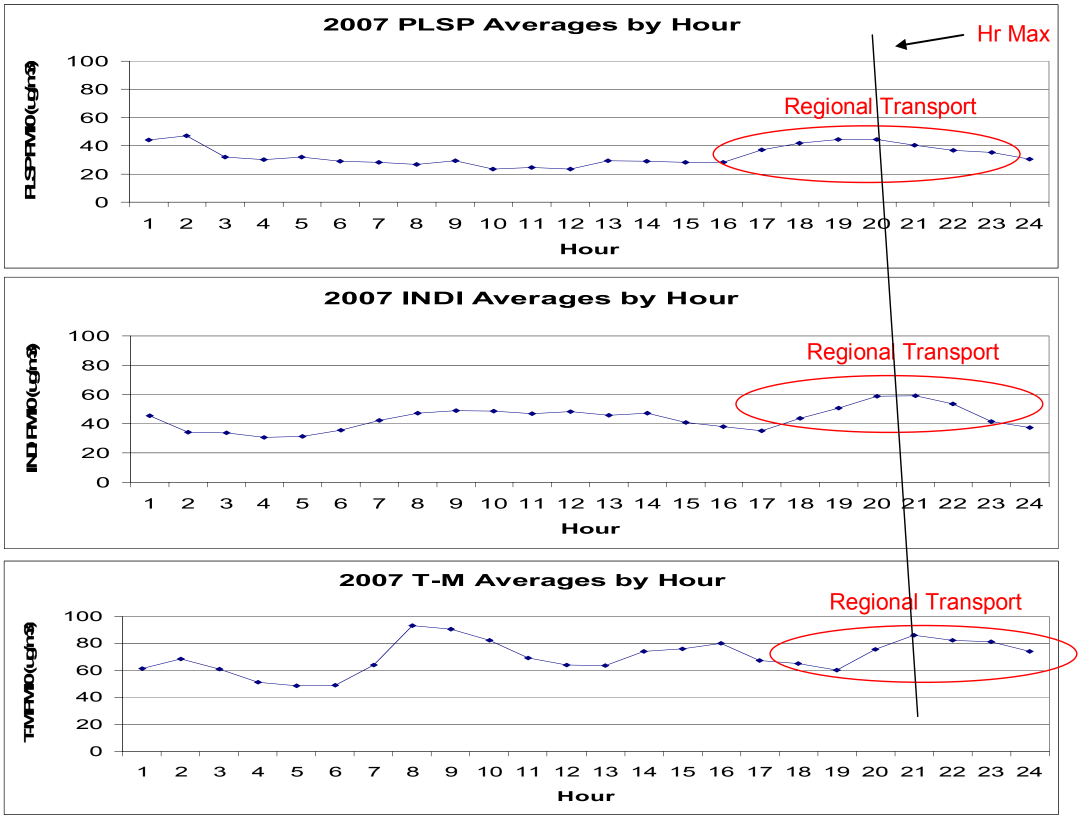


Figure A-6-2

Evening regional particulate transport through the Coachella Valley

Comparative PM10 Statistics

An assessment of the 24-hour average PM10 data matched for the overlapping 240 days when the continuous monitors at Indio and at the Torres-Martinez were operational showed that the mean Torres-Martinez PM10 24-hour average concentration was approximately 50 percent higher than that measured by BAM at Indio. (See Figure A-6-3). The mean Torres-Martinez PM10 24-hour average concentrations were 91 percent higher than the BAM PM10 measured at Palm Springs for the matching sampling days. By contrast, the difference between the measured mean 24-hr average BAM PM10 between Palm Spring and Indio over a longer distance (24 miles) was 10 µg/m^3 or approximately 32 percent.

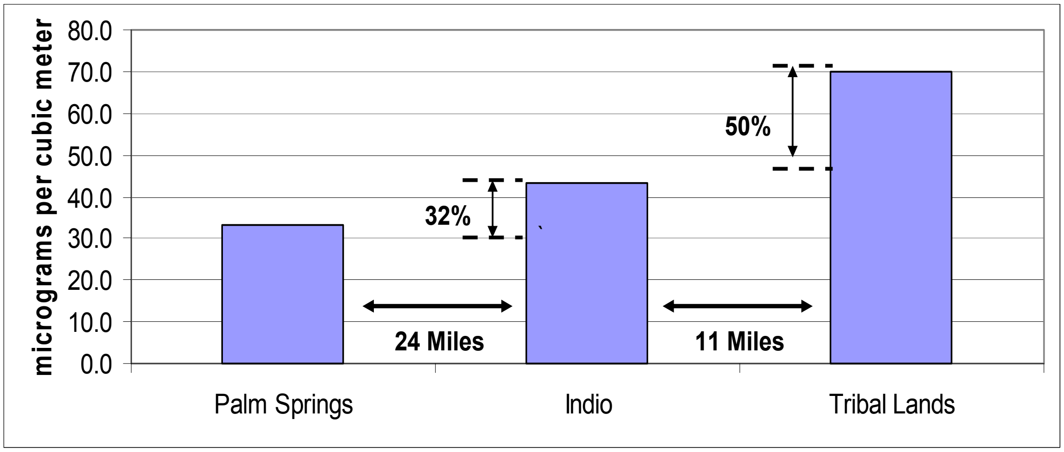


Figure A-6-3

2007 Average 24-hr BAM/BAM PM10 measured at Palm Springs, Indio and Torres-Martinez Tribal Lands

The 2007 Torres-Martinez hourly data exhibited a significantly higher, more disperse distribution of concentrations than observed at the District monitoring sites with a standard deviation of 103 µg/m^3. The hourly data includes frequent occurrences of spikes where near background concentrations jump more than five fold within an hour under normal meteorological conditions (lights winds and clear skies). By contrast, the standard deviations of the Palm Springs and Indio hourly BAM data were 45 and 54 µg/m3, respectively. This pattern has been repeated in 2008 and 2009 (through November).

Figure A-6-4 provides the 2005-2007 data correlation between the District Indio BAM PM10 24-hr average concentrations and the corresponding filter based FRM measurements for Indio (excluding the exceptional events). The correlation coefficient between the two measurement techniques is R=0.81 (R^2=0.66) with the BAM exhibiting a tendency for under estimating the upper range of the FRM measurements of the PM10 distribution. Given that the instruments are based on fundamentally different technologies and do not share a common intake manifold, the correlation is strong for ambient air quality monitoring. The high correlation between the two types of instruments indicates that the Indio BAM PM10 is a demonstrated reliable estimator of the HiVol FRM instrument expected performance.

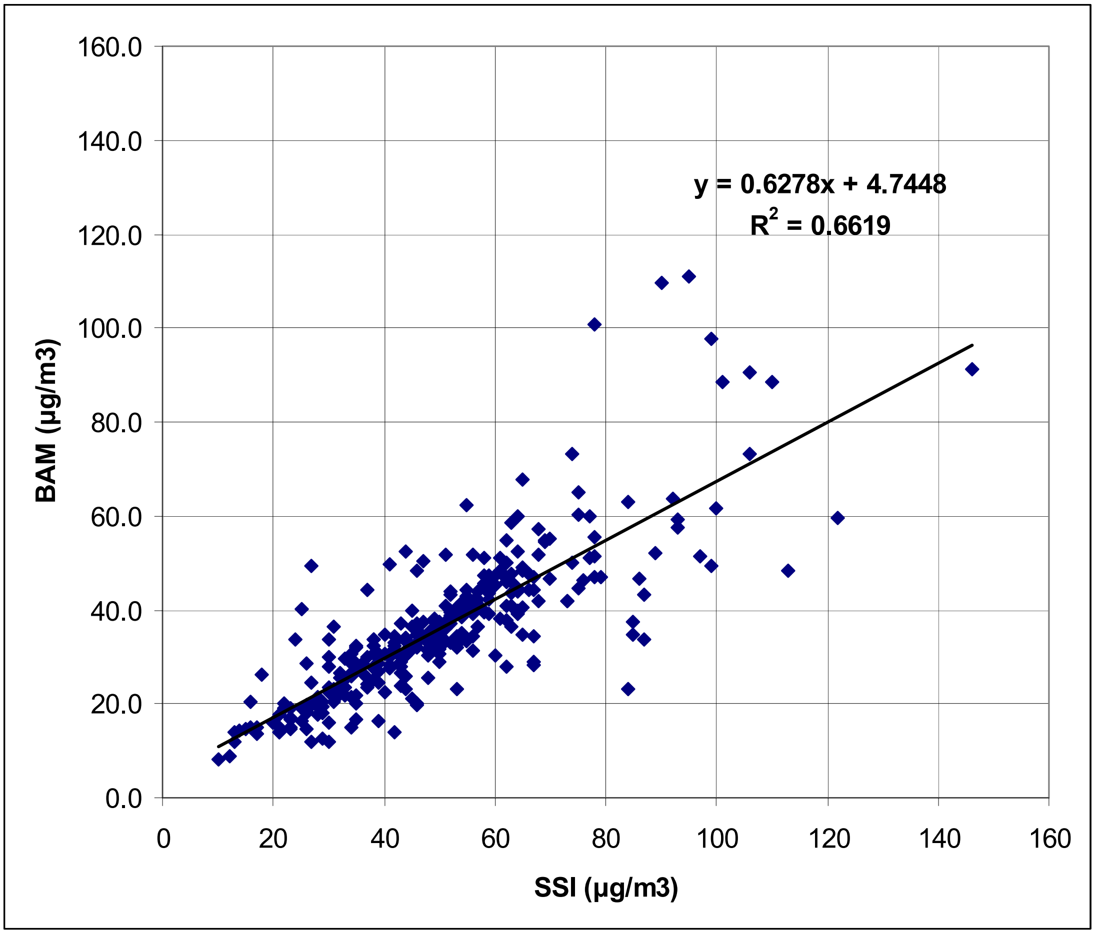


FIGURE A-6-4

Comparison of the 2005-2007 24-Hour Average BAM Continuous PM10 Concentrations with the FRM Selective Sized Inlet (SSI) Filter PM10 Measurements (µg/m^3)

From January 27, 2007 through May 21, 2007, the District operated a HiVol FRM PM0 sampler on the grounds of the Desert Mirage High School, less than 1- mile north of the Torres-Martinez Community Center. The Desert Mirage HS site was sited, on-campus, with permanent ground cover surrounding the site.

Table A-6-1 provides a comparison of the Indio and Torres-Martinez BAM data to the FRM data. The 24-hour data from the Indio BAM, located approximately 10 miles from the Desert Mirage HS site, had a 67 percent correlation (on days when both instruments where operational) with compared with a 53 percent correlation with the nearly collocated Torres-Martinez BAM (on days when both instruments where operational). The mean 24-hour average concentrations at the three sites (for were similar on those cross matched days however, the standard deviation of the Torres-Martinez BAM data was 156 percent of the Desert Mirage HS FRM.

When average of the one-in-three HiVol measurements are compared to the 24-hour data average for all days between January 27, 2007 through May 21, 2007, the difference between the PM10 data measured at Torres-Martinez and the Desert Mirage HS becomes more significant. The mean concentration is 17 percent higher than at the high school and the standard deviation is more than doubled (113 percent increase). By comparison, the mean Indio BAM data is 5 percent lower than the high school with only a 53 percent increase over the HiVol standard deviation. Again, compared to the independent Desert Mirage HS site, the Indio BAM, located 10 miles away more closely matched the HiVol data than the Torres-Martinez data (located less than 1-mile away). The disparity in the data, suggests that the Torres-Martinez site was impacted by a local source of PM10, which did not impact the school which was less than 1-mile away.

Table A-6-1

Comparison of Short-Term 2007 PM10 Sampling Programs
(January 27, 2007 through May 21, 2007)

	Desert Mirage HS	Indio BAM (Matched Days)	Torres-Martinez BAM (Matched Days)	Indio BAM (All Days)	Torres-Martinez BAM (All Days)
Average (ug/m3)	43.0	43.9	45.6	41.0	50.5
Standard Deviation (ug/m3)	20.8	25.4	32.4	31.9	44.2
Correlation with Desert Mirage HS		0.67	0.53		

Table A-6-2 summarizes the comparison between the Indio BAM PM10 data and the Torres-Martinez BAM PM10 for the period including January 2007 through November 2009. In each year, the Torres-Martinez annual average concentration is nearly double that of Indio. Similarly, the standard deviation of the hourly data is double that calculated from the Indio data. The Torres-Martinez data identified 37 days when 24-hour average concentrations exceeded 150 $\mu g/m^3$ compared with 5 days at Indio. Similar disparities are evident in the number of hours exceeding 150, 250, 500 and 1000 $\mu g/m^3$. A spike test was applied to the data, using a 2-annual standard deviation threshold (the difference between hour 1 minus hour 0 being greater than 2-standard deviations of the annual data). The Torres-Martinez data experienced spikes in roughly 2 percent of all the observations. The Indio spike test showed abnormal shifts in concentration at less than 1 percent of the observations. Furthermore, the Torres-Martinez data had 219 hours above 500 $\mu g/m^3$ and 16 incidents of at least 1000 $\mu g/m^3$. The extremely high values of hourly PM10 severely test the reliability of the BAM. District BAM data values exceeding 500 $\mu g/m^3$ are typically screened for validity. Figure A-6-5 illustrates the frequency of the Torrez-Martinez daily maximum BAM PM10 reaching questionable high values.

Appendix 1 to this Attachment provides the comparison of the diurnal profiles of BAM PM10 measured at the Torres-Martinez monitoring site and Indio for each day during the January 2007 through November 2009 period that the Torres-Martinez data indicated an exceedance of the standard. The figures include the last two hours in the preceding day and the first two hours of the following day to provide continuity. In the majority of daily profiles, the Torres-Martinez data is inconsistent with the Indio BAM (which has a high correlation the Indio FRM) and shows no continuity in the hour-to-hour readings. Where the profiles line-up, a case can be made that there is a regional event taking place but, this seldom occurs.

Figure A-6-6 shows the diurnal profiles for the two sites averaged for the 37 days. With exception of a few days, the Torres-Martinez average concentration was approximately 100 $\mu g/m^3$ greater than Indio's average PM10 concentration.

Table A-6-2

Comparison of 2007-2009 BAM PM10 Sampling Programs

Index	**2007**		**2008**		**2009**	
	Torres-Martinez	Indio	Torres-Martinez	Indio	Torres-Martinez	Indio
Mean	70.3	42.9	66.0	36.9	68.0	35.0
Standard Deviation	101.3	54.5	98.7	49.6	85.3	36.1
Days > 150 ug/m3	11	2	16	2	10	1
Hours/Year	6236	8520	8123	8573	7623	7961
% Hours Reporting	71	97	93	98	95	99
Hours >150 ug/m3	511	221	541	137	526	74
Hours > 250 ug/m3	218	95	239	68	200	35
Hours > 500 ug/m3	60	29	87	25	72	7
Hours > 1000 ug/m3	15	0	9	0	0	0
Spike > 2 STDEV	104	49	141	82	137	20
% Spike to Annual Hrs	1.7	0.6	1.7	1.0	1.8	0.3
Average Spike ug/m3	421	411	443	461	385	279

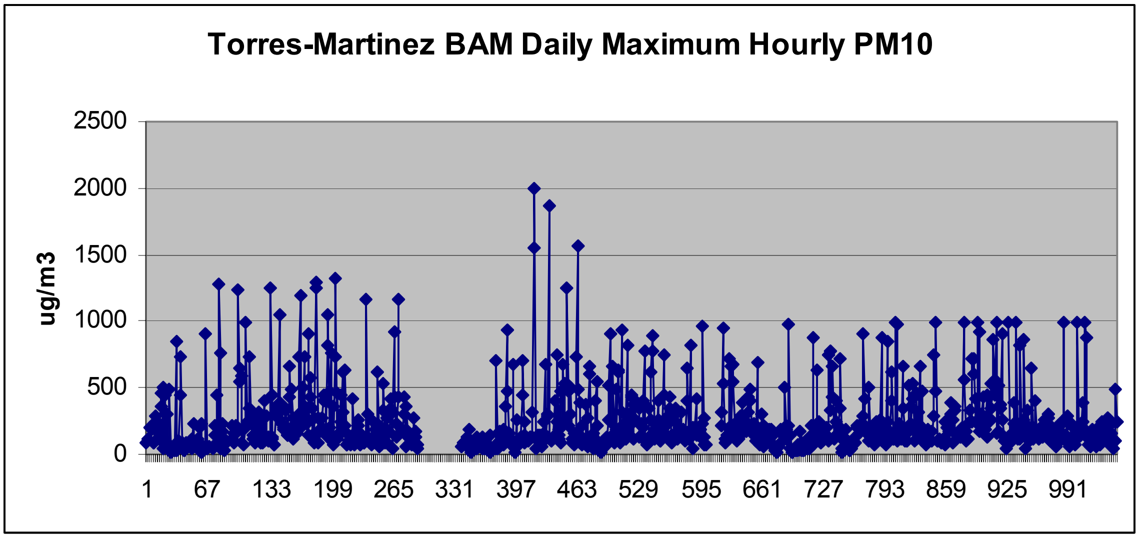


Figure A-6-5

Torres-Martinez Daily Maximum Hourly Average BAM PM10
(2007-November 2009)

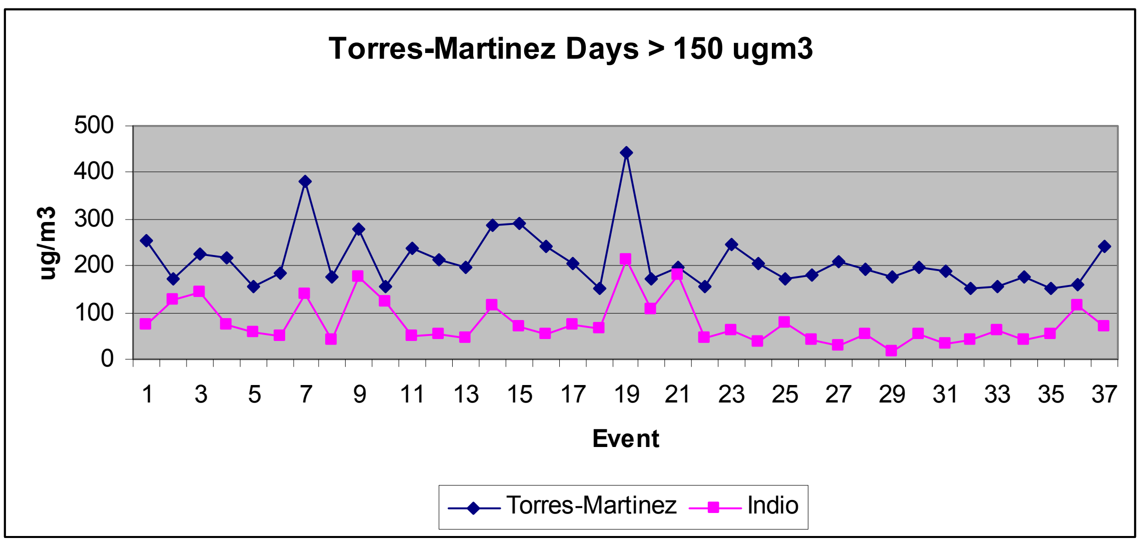


Figure A-6-6

Comparison of Torres-Martinez and Indio BAM 4-hour Average PM10
Concentrations on Days Torres-Martinez BAM Exceeded 150 $\mu g/m^3$

Exclusion of Exceptional Events

The District has utilized U.S. EPA's exceptional event policy to flag data in AQS for exclusion from attainment demonstration evaluation due to high winds generating excessive fugitive dust. Attachment-2 of the Request provides an overview of the process. While the Torres-Martinez data submittal to AQS included some flags to the hourly data, no attempt to flag candidate days for exclusion as exceptional events. While this process would not have eliminated all of the violation day, several appear to be serious candidates in the 37 days covering January 2007 through November 2009.

A limited analysis of the weather conditions for the 37 Torres-Martinez violation days and 2-days identified by the Indio BAM are evaluated in Table A-6-3. Weather data from the NWS Thermal Airport reporting station are used as an independent measure of the daily southern Coachella Valley meteorology. Candidate days for flagging are identified as having daily average winds of at least 15.0 mph or greater, peak hourly average winds greater than 20 mph and peak gusts of 35 mph or higher. Also unusual weather, such as thunderstorms (TR) or long-range transport of PM10 events (from Arizona or Northern Mexico) are typical candidates. Seventeen of the 37 Torres-Martinez days clearly should have been flagged. A strong case could be made for 5 more days flagging. All five Indio days exceeding 150 $\mu g/m^3$ met the criteria for exclusion. The remaining 15 days suggest that the Torres-Martinez BAM was impacted by a local source of PM10.

Table A-6-3

Weather at Thermal Airport on Torres-Martinez and Indio On Days PM10 Exceeded 150 $\mu g/m^3$

					TRM					
Year	Month	Day	Torres-Martinez (ug/m3)	Indio (ug/m3)	24-Hr Avg WS	Max Hr WS	Dir Max Hour	Max Gust	OBS Report*	Wx Flag
					MPH	MPH	DEG	MPH		
7	1	5	N/A	193	17.9	35	330	46	S/H	Y
7	5	2	256	73	13.2	24	270	32	S/H	
7	5	4	173	128	17.4	28	350	36	S/H	Y
7	6	6	224	144	20.1	30	340	40	S/H	Y
7	7	7	217	74	6.3	18	150	24		
7	7	12	155	57	9.6	21	330	21		
7	7	16	183	48	10.1	26	340	31		
7	7	24	381	138	6.3	20	140	26	S/H	
7	8	9	178	41	6.9	15	150	24		
7	10	16	277	176	17.6	26	330	35	S/H	Y
7	10	17	155	125	15.1	24	330	31	S/H	Y
7	10	21	239	51	12.0	23	320	30	S/H	P
8	2	14	213	55	8.3	22	350	35	S/H	
8	3	2	195	46	15.0	28	360	37	S/H	Y
8	3	14	287	114	17.4	30	340	37	S/H	Y
8	3	15	290	70	18.2	31	290	40	S/H	Y
8	3	30	242	55	16.8	28	340	37	S/H	Y
8	4	19	205	73	11.3	30	340	39		P
8	4	20	153	65	15.4	30	330	37	S/H	Y
8	4	30	443	212	22.3	37	330	48	S/H	Y
8	5	12	173	107	19.3	33	330	43	S/H	Y
8	5	21	196	180	21.8	36	330	45	S/H	Y
8	6	12	155	47	6.9	15	130	21		
8	7	19	246	62	8.8	22	130	29		
8	7	20	205	37	6.6	16	130	22	TS	Y
8	8	29	174	79	7.6	24	150	33		
8	10	3	179	41	10.6	24	280	33	S/H	Y
8	12	13	210	29	6.4	31	260	41	S/H	Y
9	4	3	N/A	169	15.2	32	340	43	S/H	Y
9	4	7	194	52	9.8	25	290	37	S/H	P
9	4	8	175	17	9.7	22	340	28		
9	6	19	195	54	8.5	18	120	25		
9	6	28	188	34	8.1	16	340	21		
9	6	29	153	41	8.9	18	340	23		
9	7	23	156	62	7.8	21	140	29		P
9	7	24	178	41	4.5	14	130	18		
9	10	19	151	53	8.1	24	340	31		P
9	10	27	160	115	9.7	31	330	41	S/H	Y
9	10	28	241	68	15.0	26	340	36		Y

* S-smoke, H-haze, TS-thunderstorm

Monitoring Station Characteristics

The monitoring site is located on tribal property off Martinez St. on an un-paved dirt lot that houses the local community center and supporting facilities. In general the lot is adjacent to large farm tracks and undeveloped desert as depicted in Figure A-6-7. Figure A-6-8 provides a focused aerial view of the community center property and the placement of the PM10 instrument. The PM10 monitor is sited on unpaved portion of the tribal property with no year round vegetative covering immediately adjacent to dirt parking fields that service the community center. In addition, the access roads on the community center property are unpaved. Figure A-6-9 shows the monitoring site looking south.

Figure A-6-7

Torres-Martinez Tribal Lands, Community Center and Air Monitoring Station

Figure A-6-8

Focused view of the Torres-Martinez Community Center and PM10 Continuous Monitoring Site

Figure A-6-8

South Facing View of the Torres-Martinez BAM PM10 Monitoring Site
(provide by CARB)

Representative Scale/Emissions Source Characterization

The placement of the monitor on the community center property subjects the sampler to emissions from entrained road dust from traffic over the access roads in the community center and fugitive dust from the adjacent dirt parking areas. The siting in conjunction with the observed PM10 concentration data indicates that the monitoring site is most likely representative of a microscale setting. (Microscale sites are typically influenced by emissions sources within 100 meters of the source).

The average diurnal hourly PM10 profile at the Torres-Martinez site supports the premise of a strong mobile source emission contribution where PM10 concentrations peak at around 7:00 am (as traffic to the Community Center begins) and again at around 4:00 pm (as traffic returns home). Figure A-6-9 presents the 2007 Torres-Martinez diurnal PM10 profile and an average freeway weekday diurnal weigh-in-motion (WIM) hourly traffic profile from the South Coast Air Basin expressed in units of percent of daily total vehicle miles traveled. The PM10 and WIM data profiles are consistent, increasing during the morning and afternoon peak periods. Similar diurnal profiles are observed in 2008 and 2009. (Note: the PM10 hourly concentrations increase in the evening due to the regional transport). The consistency in the two profiles supports the supposition of a dominant nearby (within 100 m) mobile emissions source, most likely travel over the dirt parking fields and community center roads adjacent to the monitor placement. Furthermore, repeated travel over the dirt lot causes soil fractionation leading to easier dust entrainment after the car has passed.

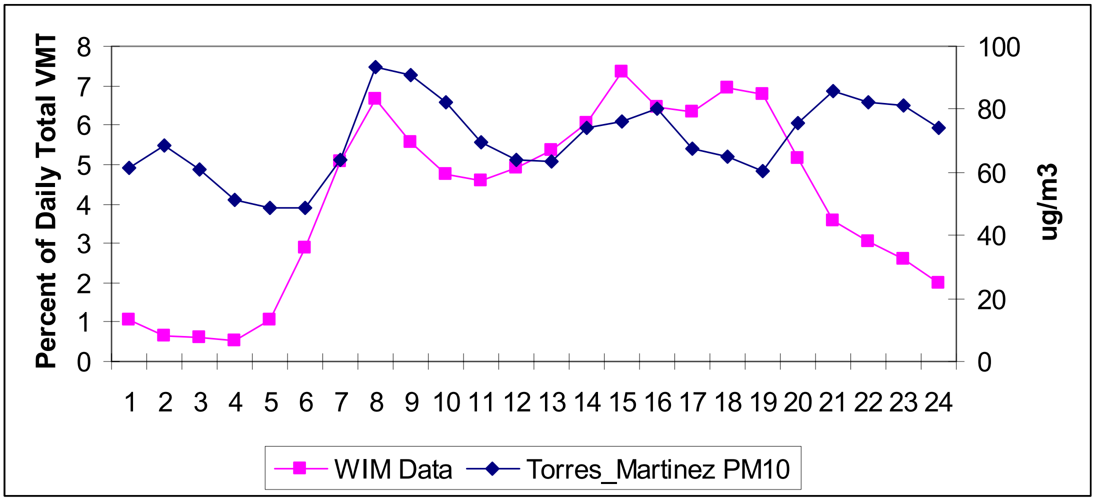


Figure A-6-9

Comparison of Torres-Martinez average diurnal PM10 profile to a weekday South Coast Air Basin weigh-in-motion (WIM) vehicle traffic diurnal profile

Relative Source Contributions to the Torres-Martinez Site: AERMOD Simulations

An AERMOD modeling analysis was conducted to assess the contributions from several local PM10 sources to the predicted annual concentration at the Torres-Martinez monitoring site. The analysis was intended to provide a relative source contribution, not an exact recreation of the observed data. AERMOD meteorological data developed for the Indio monitoring site for 2005-2007 were used in the simulations. AERMOD was run using the rural dispersion option and emissions data developed from CARB's fugitive dust emissions methodologies.

Figure A-6-10 depicts the modeling domain which extended approximately 700 m to the north, south east and west of the monitoring site. Figure A-6-11 depicts the fine-scale modeling domain within 100 m of the monitoring site receptor. Sources of PM10 were categorized into four categories: agricultural, non-agricultural, paved road dust and unpaved road dust. Emissions were ground level release and the receptor grid was set at 10 m.

- The agricultural category used CARB's non-pasture fugitive PM10 dust emissions rate for Imperial County (converted into gms/m^2/sec) as a conservative estimate of impacts from the agricultural fields to the south and east of the monitoring site.

- The non-agricultural used CARB's pasture fugitive PM10 dust emissions rate for Imperial County (converted into gms/m^2/sec) as a conservative estimate of impacts from the open space and undisturbed parking lots.

- Paved road dust used CARB's Imperial County estimate for lbs per million vehicle miles traveled converted into gms/m^2/sec.

- Unpaved road dust used CARB 2.27 lbs/mile traveled converted into gms/m^2/sec.

The paved road (Martinez Rd.) was assumed to be 10 m wide with an estimated 1,200 vehicles per day travel allocated as 20 cars per hour 0000-0500, 80 cars per hour 0600-1700 and 20 cars per hour 1800-2300. The analysis examined one and two round trips from Martinez Rd. onto the Community Center property past the monitoring sites per hour. Three routes were assessed: east-west 40 m to the north of the monitor, east-west 5 m to the north of the monitor, and southeast-northwest varying from 10-40 m south of the monitor. Travel was assumed equal on each route.

Table A-6-4 summarizes the emissions rates for each emissions source. Table A-6-5 summarizes the results of the AERMOD simulation. If only one daytime round trip is made to the community center the trips and parking lot emissions contribute 57 percent of the annual average concentration. If the number of round trips increase to two per hour the contribution from the dirt roads and parking lot increases to 69 percent of the total annual average concentration. Figure A-6-12 illustrates the source contributions for each scenario.

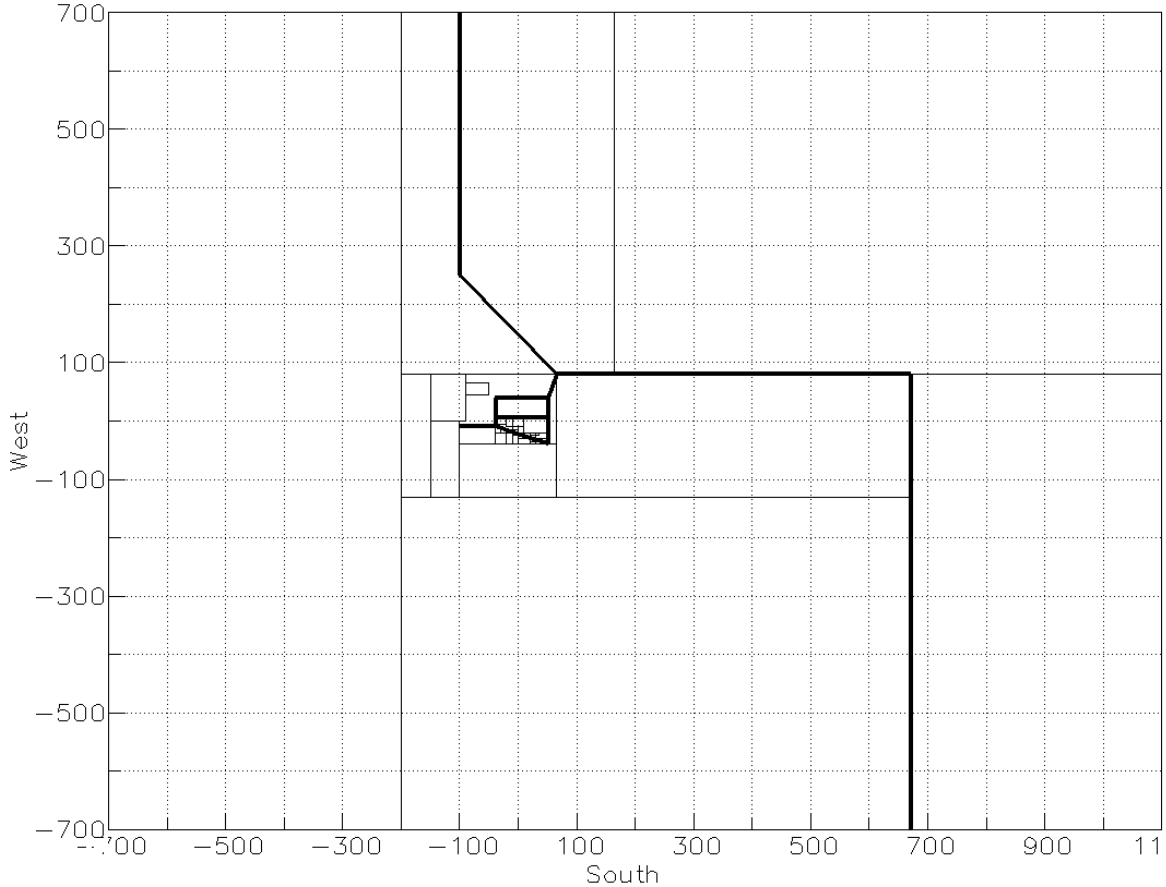


Figure A-6-10

AERMOD Modeling Domain

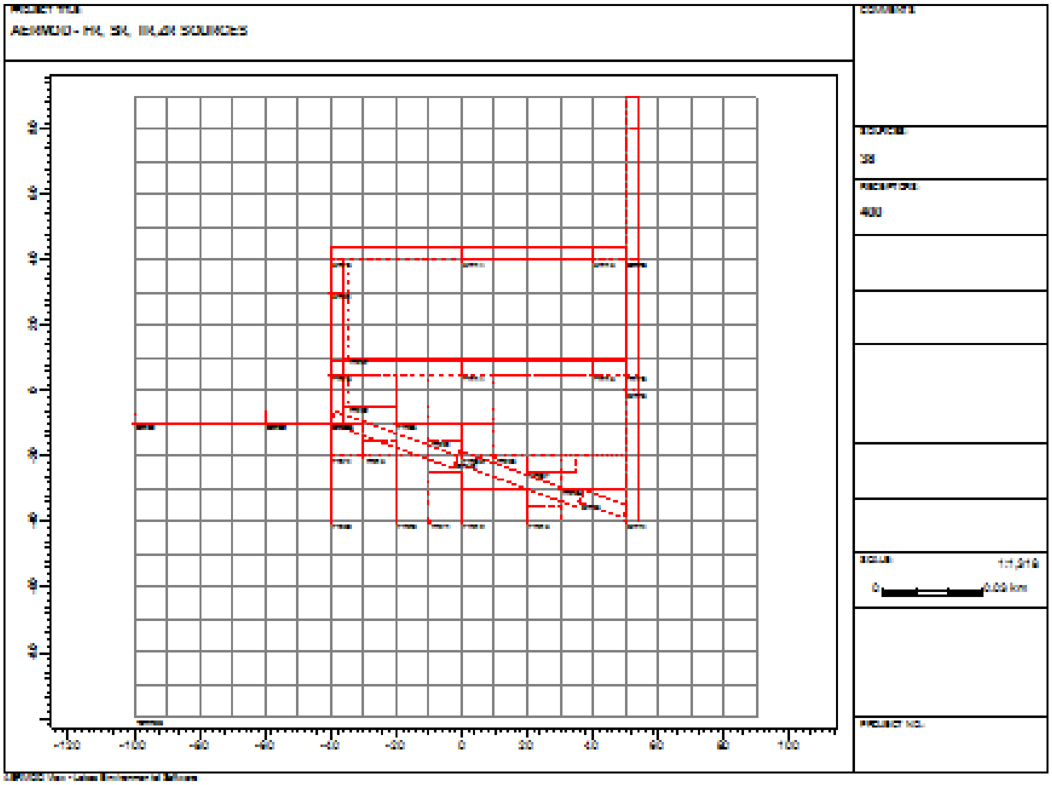


Figure A-6-10

Near Monitor AERMOD Modeling Grid

Table A-6-4

AERMOD Sources

Source	Source Category	Emission (gms/m2/sec)	x (m)	y (m)	Width (m)	Height (m)	Rotation (Degrees)
Other Sources > ± 50 m from the monitor							
110	Non-Agricultural	1.01E-06	165	80	935	620	0
111	Non-Agricultural	1.01E-06	-200	-130	50	210	0
112	Non-Agricultural	1.01E-06	65	-130	605	210	0
113	Agricultural	6.17E-08	-700	-700	500	1400	0
114	Agricultural	6.17E-08	-200	-700	870	570	0
115	Non-Agricultural	1.01E-06	-200	80	365	620	0
116	Agricultural	6.17E-08	670	-700	430	780	0
117	Non-Agricultural	1.01E-06	-100	-130	165	90	0
118	Non-Agricultural	1.01E-06	-150	-130	50	130	0
119	Non-Agricultural	1.01E-06	-150	0	60	80	0
120	Non-Agricultural	1.01E-06	-90	45	40	20	0
Parking Lot							
201	Non-Agricultural	1.01E-06	-35	10	85	30	0
202	Non-Agricultural	1.01E-06	-35	-5	15	10	0
203	Non-Agricultural	1.01E-06	-20	-10	10	15	0
204	Non-Agricultural	1.01E-06	-10	-15	10	5	0
205	Non-Agricultural	1.01E-06	0	-20	10	10	0
206	Non-Agricultural	1.01E-06	10	-20	40	25	0
207	Non-Agricultural	1.01E-06	20	-25	15	5	0
208	Non-Agricultural	1.01E-06	30	-30	20	10	0
209	Non-Agricultural	1.01E-06	-40	-40	20	20	0
210	Non-Agricultural	1.01E-06	-20	-40	10	20	0
211	Non-Agricultural	1.01E-06	-10	-40	10	15	0
212	Non-Agricultural	1.01E-06	0	-40	20	10	0
213	Non-Agricultural	1.01E-06	20	-40	10	5	0
214	Non-Agricultural	1.01E-06	-40	-20	10	10	0
215	Non-Agricultural	1.01E-06	-30	-20	10	5	0
South Route							
301	Un-Paved Road	8.89E-05	-100	-10	40	4	0
302	Un-Paved Road	8.89E-05	-60	-10	20	4	0
303	Un-Paved Road	8.89E-05	-40	-10	40	4	20
304	Un-Paved Road	8.89E-05	-2	-22	40	4	20
305	Un-Paved Road	8.89E-05	36	-34	14	4	20
306	Un-Paved Road	8.89E-05	50	-40	4	40	0
307	Un-Paved Road	8.89E-05	50	0	4	40	0
308	Un-Paved Road	8.89E-05	50	40	4	40	0

Table A-6-4 (Continued

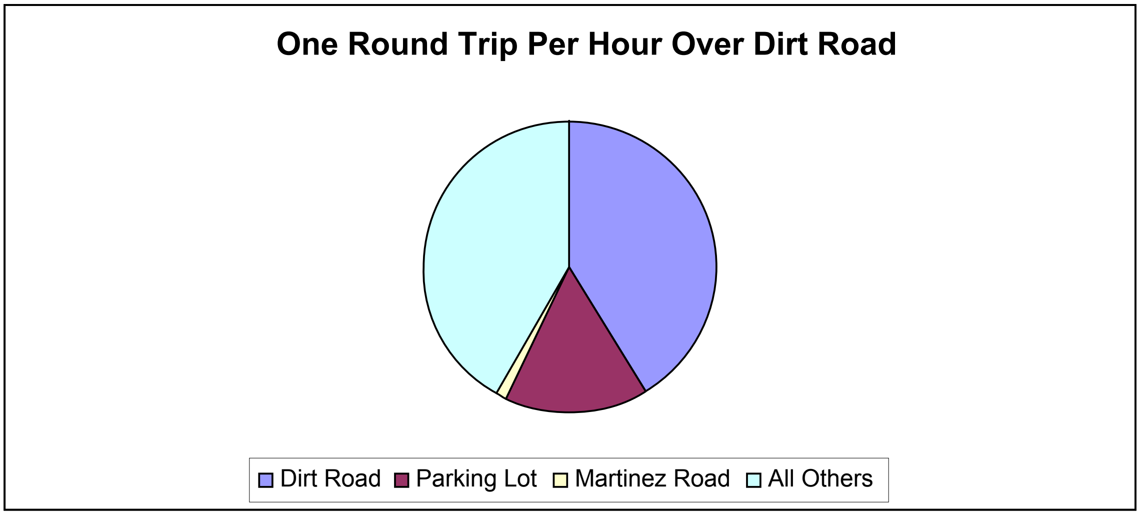
AERMOD Sources

Source	Source Category	Emission (gms/m2/sec)	x (m)	y (m)	Width (m)	Height (m)	Rotation (Degrees)
North Route							
401	Un-Paved Road	8.89E-05	-100	-10	40	4	0
402	Un-Paved Road	8.89E-05	-60	-10	20	4	0
403	Un-Paved Road	8.89E-05	-40	-10	4	40	0
404	Un-Paved Road	8.89E-05	-40	30	4	10	0
405	Un-Paved Road	8.89E-05	-40	40	40	4	0
406	Un-Paved Road	8.89E-05	0	40	40	4	0
407	Un-Paved Road	8.89E-05	40	40	10	4	0
408	Un-Paved Road	8.89E-05	50	40	4	40	0
Center Route							
501	Un-Paved Road	8.89E-05	-100	-10	40	4	0
502	Un-Paved Road	8.89E-05	-60	-10	20	4	0
503	Un-Paved Road	8.89E-05	-40	-10	4	15	0
504	Un-Paved Road	8.89E-05	-40	5	40	4	0
505	Un-Paved Road	8.89E-05	0	5	40	4	0
506	Un-Paved Road	8.89E-05	40	5	10	4	0
507	Un-Paved Road	8.89E-05	50	5	4	85	0
Martinez Road							
601	Paved Road	2.18E-06	-100	750	10	50	0
602	Paved Road	2.18E-06	-100	650	10	100	0
603	Paved Road	2.18E-06	-100	550	10	100	0
604	Paved Road	2.18E-06	-100	450	10	100	0
605	Paved Road	2.18E-06	-100	350	10	100	0
606	Paved Road	2.18E-06	-100	250	10	100	0
607	Paved Road	2.18E-06	-100	250	100	10	50
608	Paved Road	2.18E-06	-20	180	100	10	50
609	Paved Road	2.18E-06	50	105	30	10	50
610	Paved Road	2.18E-06	65	80	100	10	0
611	Paved Road	2.18E-06	165	80	100	10	0
612	Paved Road	2.18E-06	265	80	100	10	0
613	Paved Road	2.18E-06	365	80	100	10	0
614	Paved Road	2.18E-06	465	80	100	10	0
615	Paved Road	2.18E-06	565	80	100	10	0
616	Paved Road	2.18E-06	670	80	10	100	0
617	Paved Road	2.18E-06	670	-20	10	100	0
618	Paved Road	2.18E-06	670	-120	10	100	0
619	Paved Road	2.18E-06	670	-220	10	100	0
620	Paved Road	2.18E-06	670	-320	10	100	0
621	Paved Road	2.18E-06	670	-420	10	100	0
622	Paved Road	2.18E-06	670	-520	10	100	0
623	Paved Road	2.18E-06	670	-620	10	80	0
624	Paved Road	2.18E-06	665	80	10	5	0

Table A-6-5

Simulation Summary

Source Category	A) Predicted Concentration (1-Round Trips/Hr 0500-1700 ug/m3)	A) Percentage Contribution to Annual Average Concentration	B) Predicted Concentration (2-Round Trips/Hr 0500-1700 ug/m3)	B) Percentage Contribution to Annual Average Concentration
Dirt Roads ± 50 m of Monitor (Average 3-Routes)	34.8	41	69.6	58
Parking Lot ± 50 m of Monitor	13.6	16	13.6	11
Martinez Road	0.7	1	0.7	1
Agriculture and Non-Agriculture > ± 50 m of Monitor	35.9	42	35.9	30
Total	85	100	119.8	100



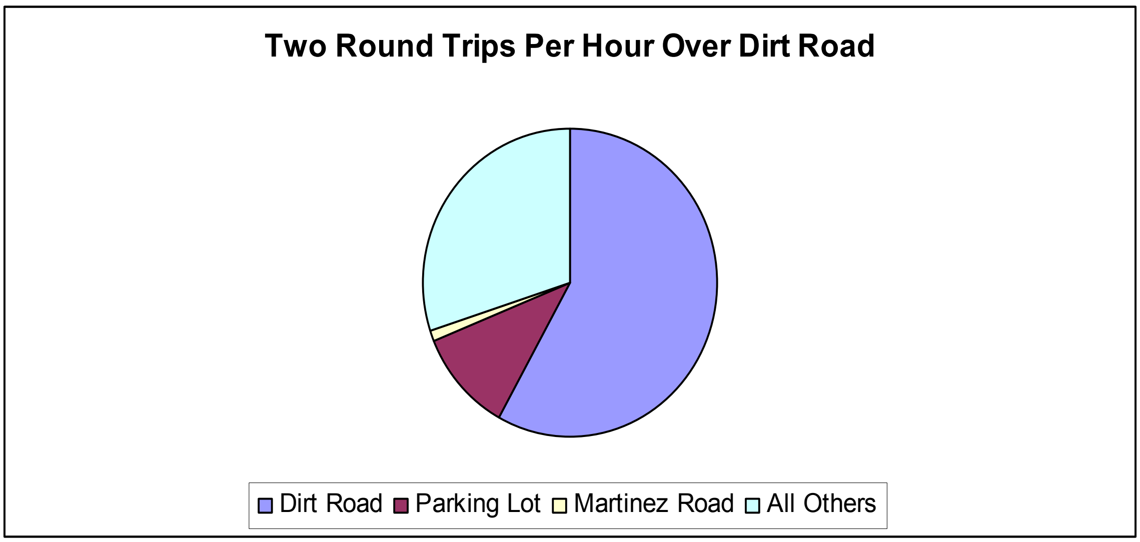


Figure A-6-12

Percentage Emissions Source Contributions to the Torres-Martinez BAM PM10 Monitor

Conclusion

The Torrez-Martinez monitoring station is representative of a microscale PM10 exposure that is directly impacted by localized emissions. The follow points taken from the analysis above support this assertion:

- The monitor was sited on a dirt parking lot subject to fugitive dust from adjacent vehicle travel in direct conflict with CFR 58, Appendix E (3)(A).

- AERMOD simulations support that the sources within 50 m dominate the impact to the monitor.

- Diurnal PM10 profiles mirror WIM profiles from Basin freeways showing a distinct commuting pattern.

- The station's is consistently higher than the regional background measured at Indio and for a limited sampling period, the Desert Mirage HS HiVol site (within one mile) suggesting a local emissions source impact.

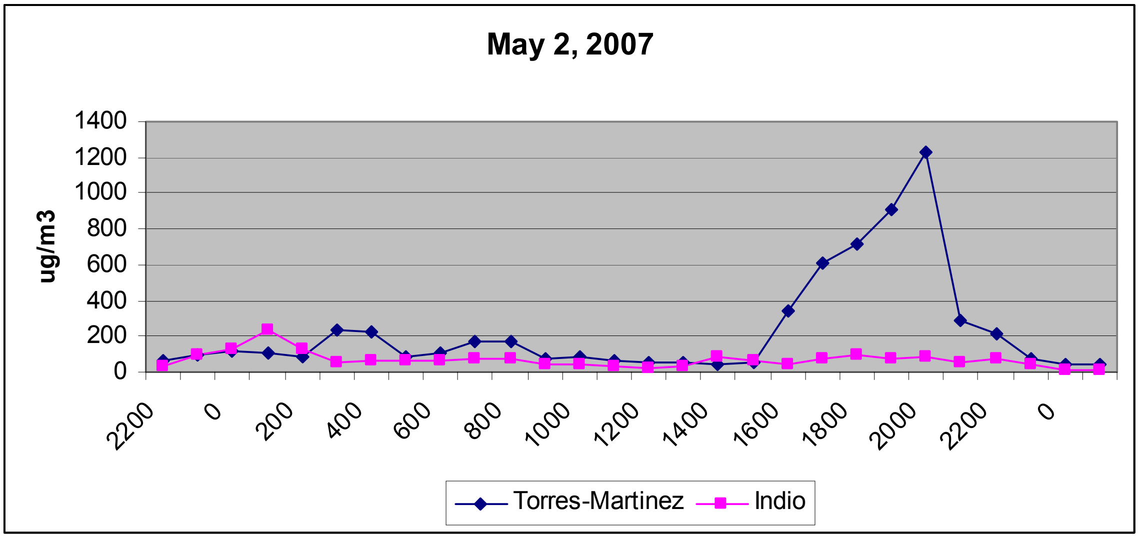
- Data from the monitor exhibits multiple hourly spikes, with data peaks exceeding 1000 $\mu g/m^3$ and high variance compared with other BAMs operating in the Coachella Valley.

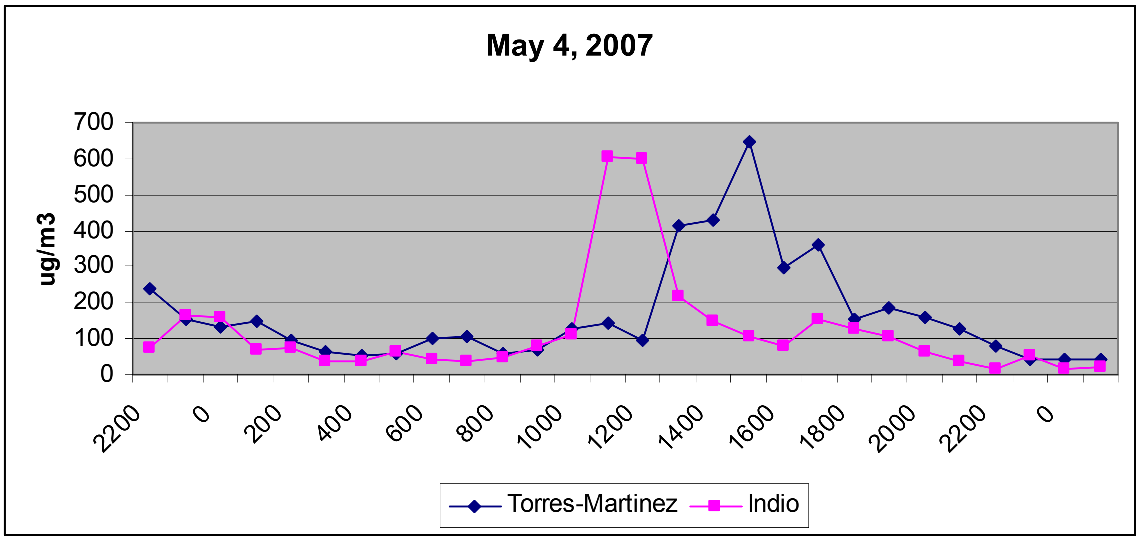
- No attempt was made to screen high wind days for flagging as exceptional events in the AQS.

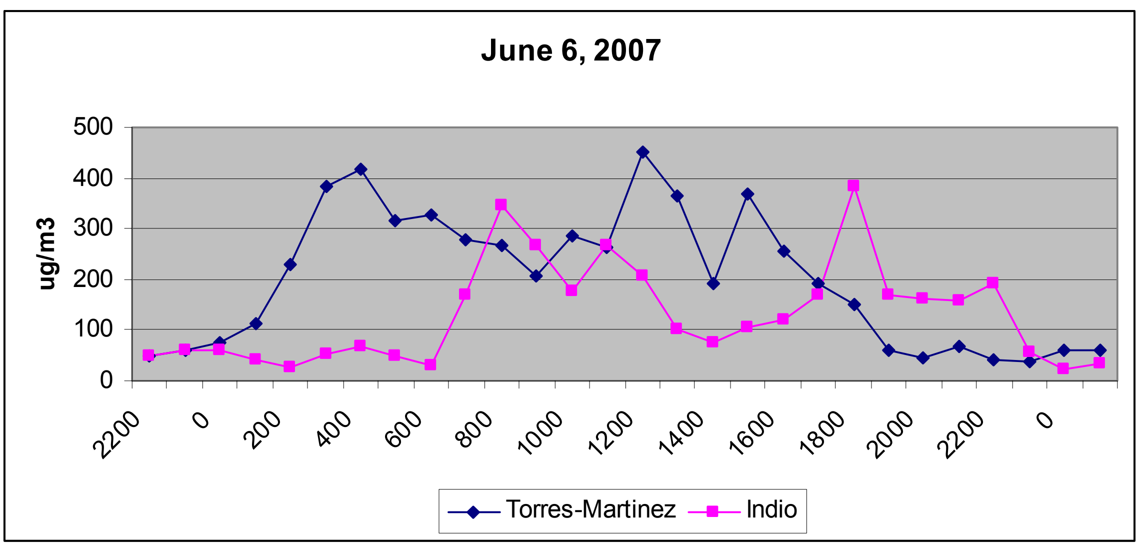
In summary, data from the site should not be included in the regional air quality standards attainment assessment.

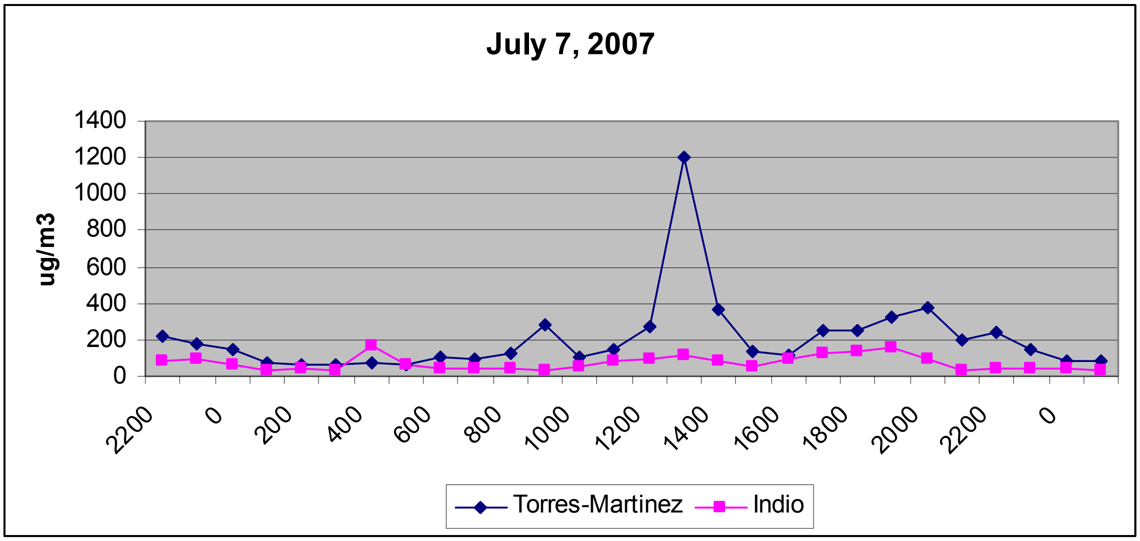
Appendix

Diurnal Torres-Martinez and Indio PM10 BAM Profiles On Days When the Torres-Martinez Monitor 24-Hour BAM PM10 Was Greater Than 150 $\mu g/m^3$


May 2, 2007
ug/m3
1400
1200
1000
800
600
400
200
0
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio


May 4, 2007
ug/m3
700
600
500
400
300
200
100
0
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio


June 6, 2007
ug/m3
500
400
300
200
100
0
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
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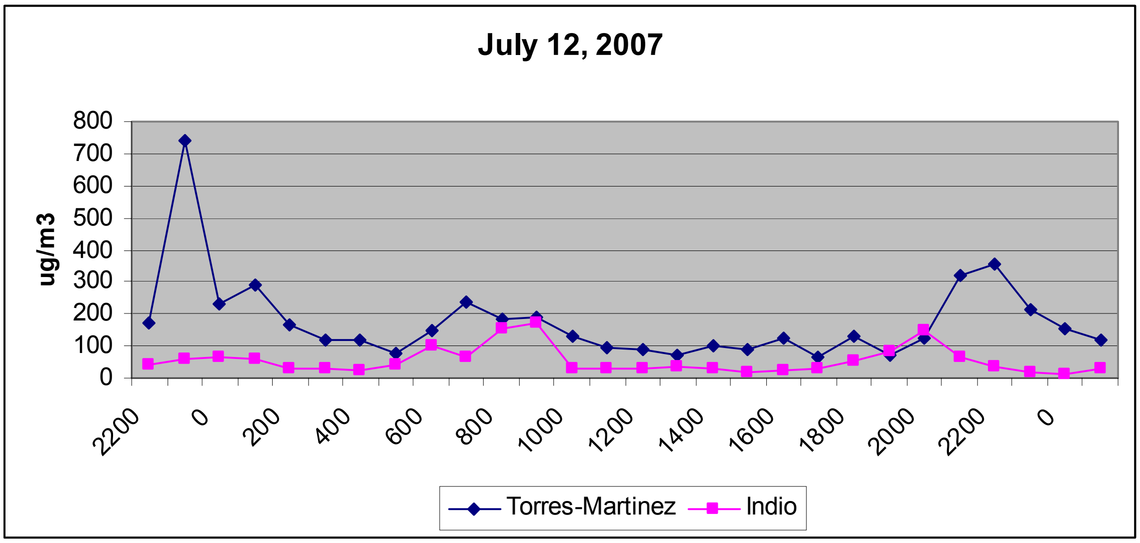
1200
1000
800
600
400
200
0
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
800
700
600
500
400
300
200
100
0
2200
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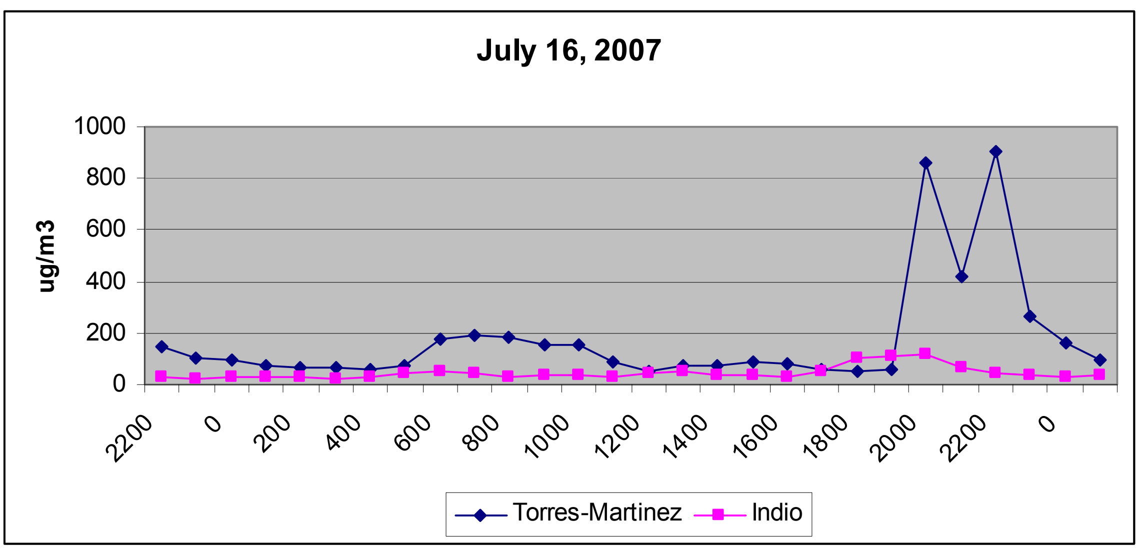
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
1000
800
600
400
200
0
2200
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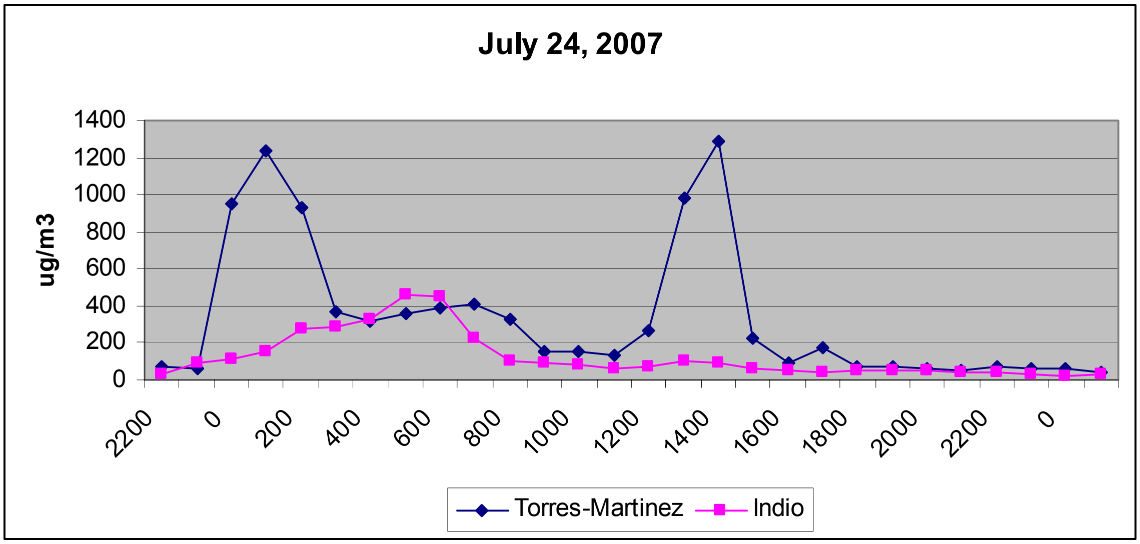
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
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1200
1000
800
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400
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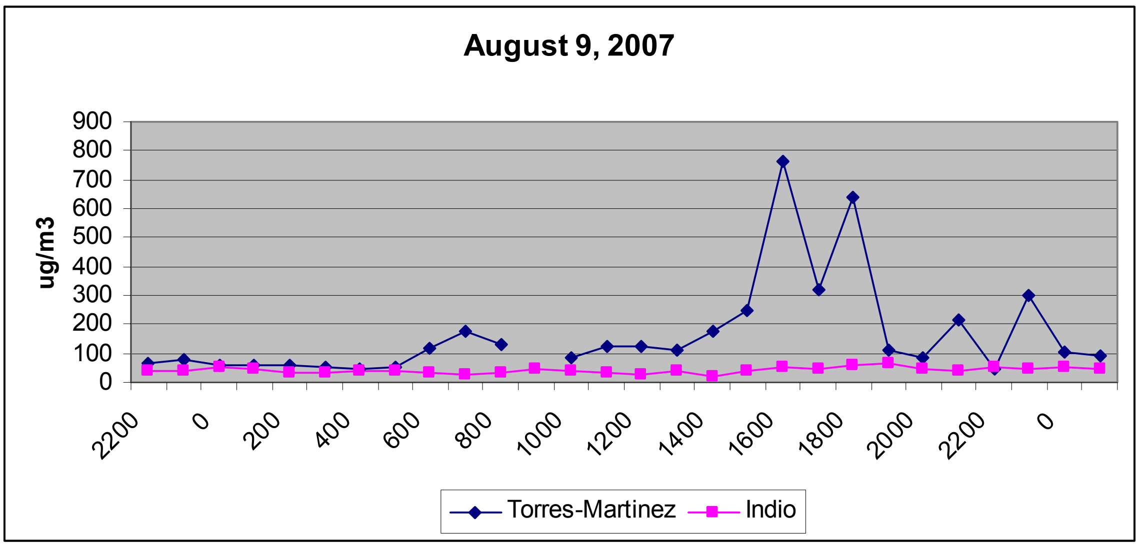
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
900
800
700
600
500
400
300
200
100
0
2200
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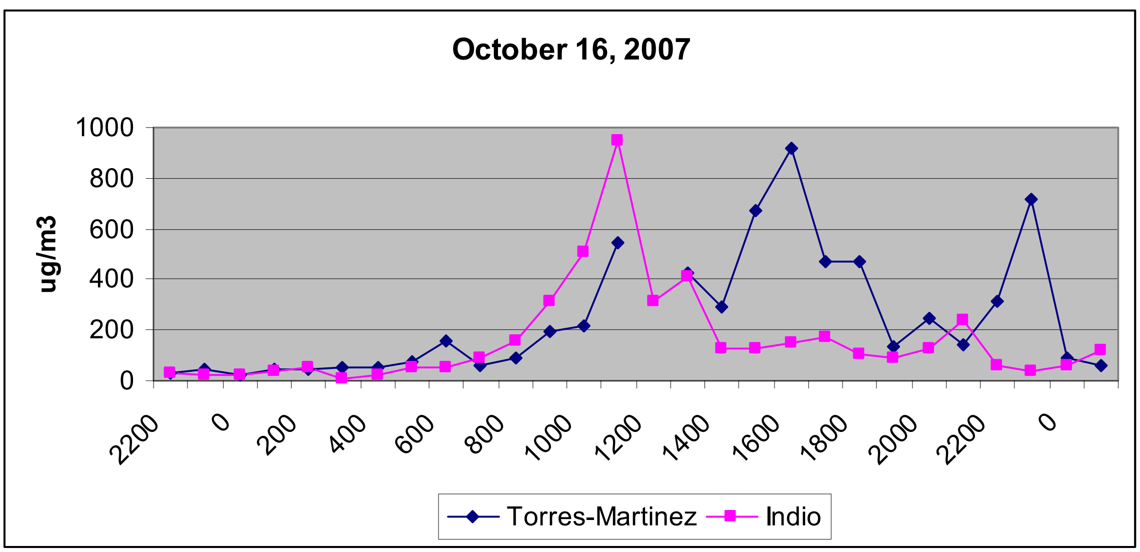
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
1000
800
600
400
200
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2200
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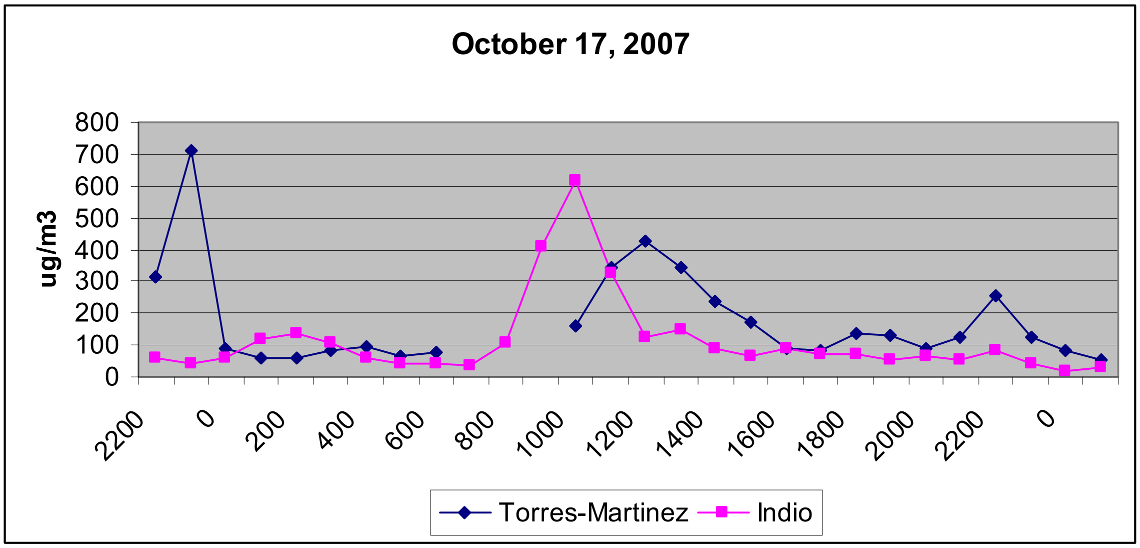
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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ug/m3
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700
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300
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100
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2200
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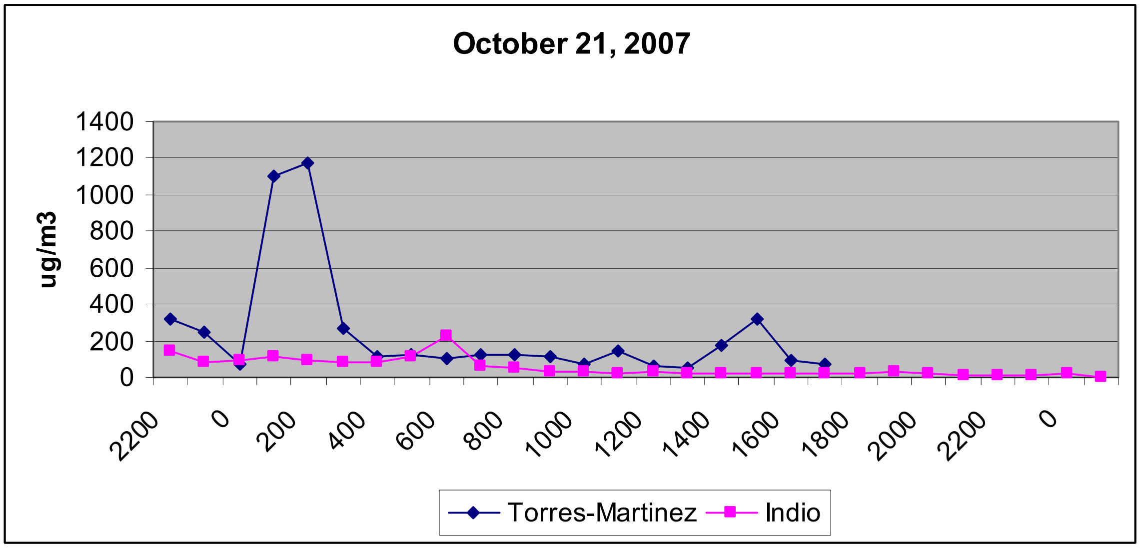
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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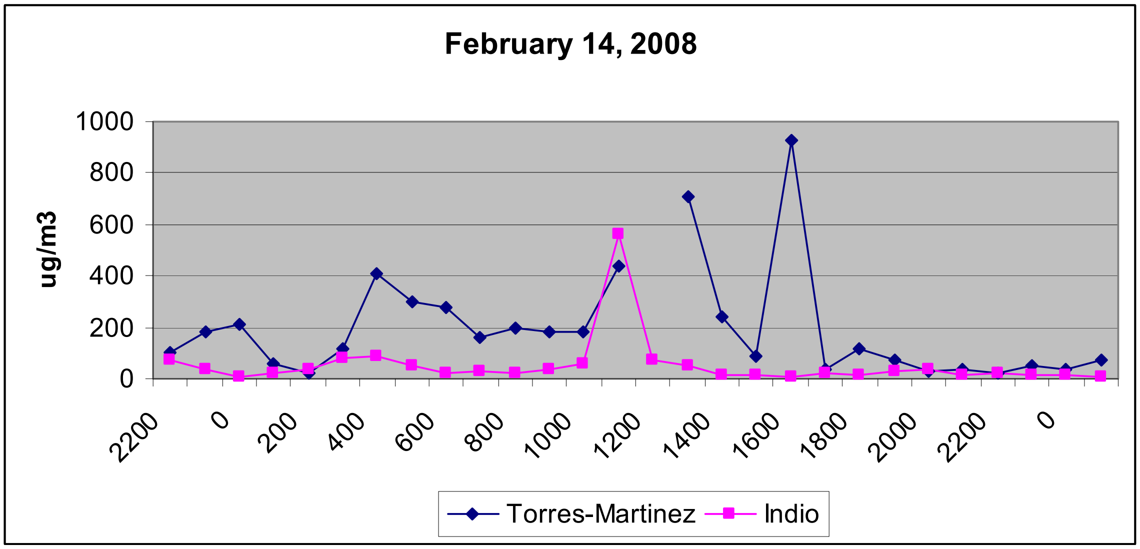
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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1800
2000
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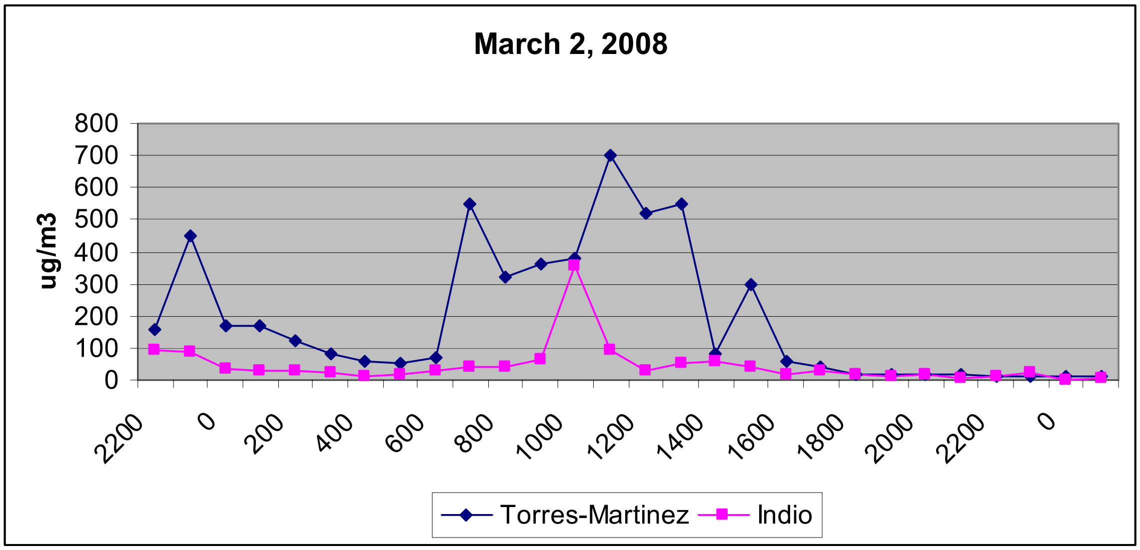
Torres-Martinez
Indio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ug/m3
800
700
600
500
400
300
200
100
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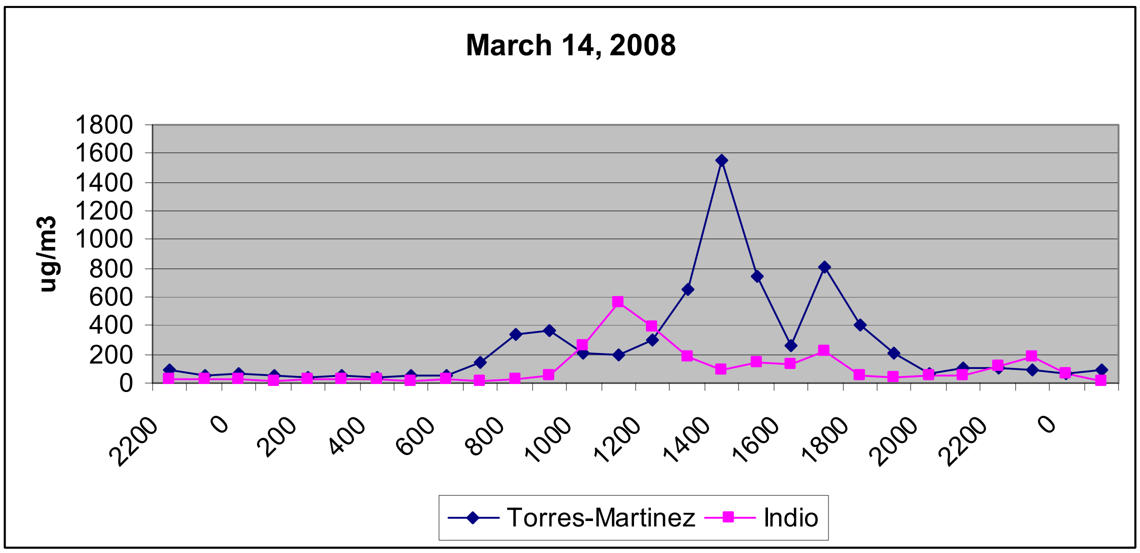
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio


March 14, 2008
ug/m3
1800
1600
1400
1200
1000
800
600
400
200
0
2200
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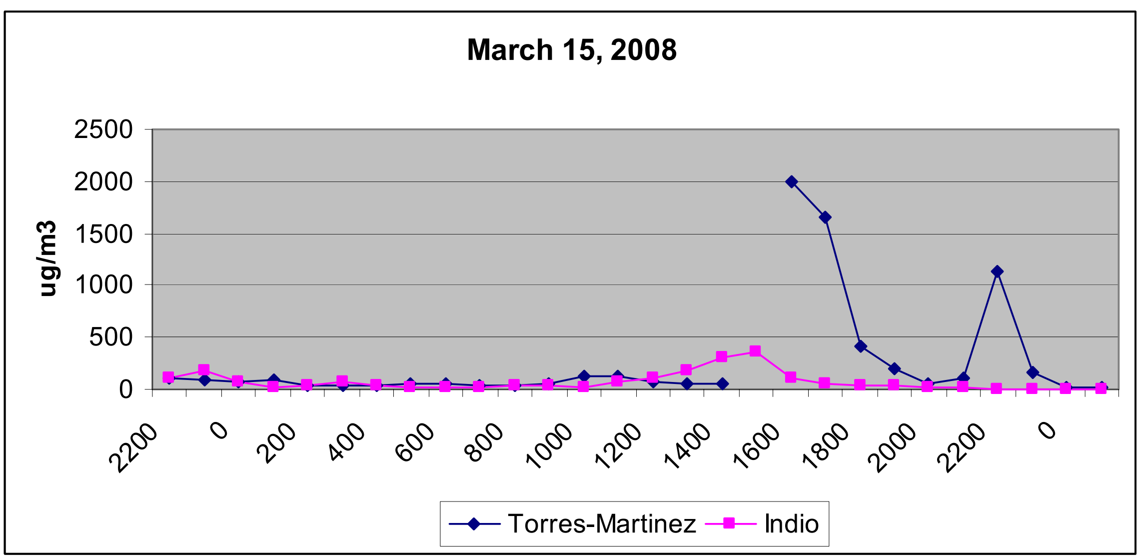
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio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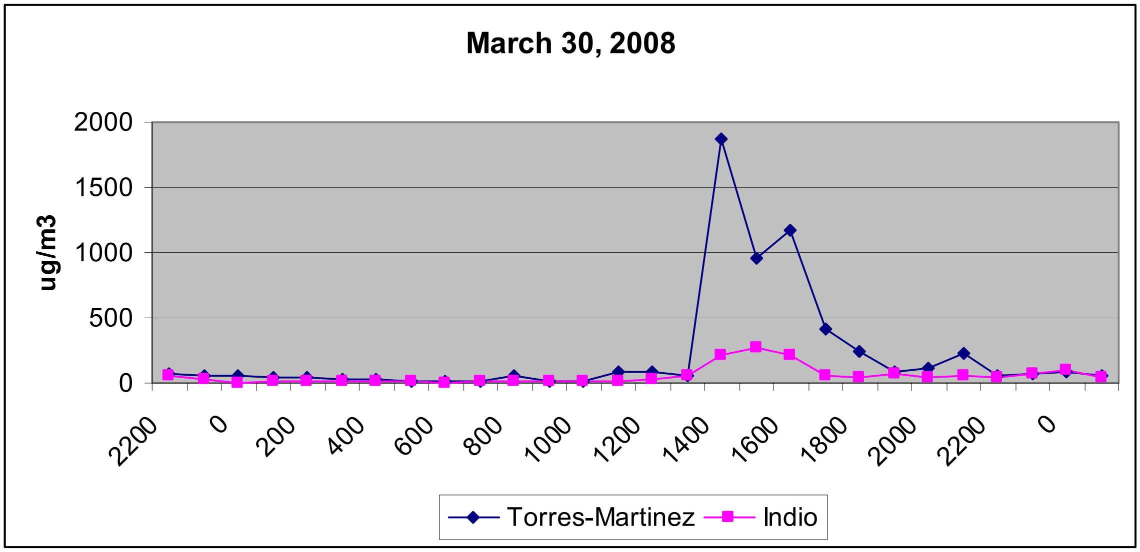
2000
2200
0
Torres-Martinez
Indio


March 30, 2008
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1500
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1000
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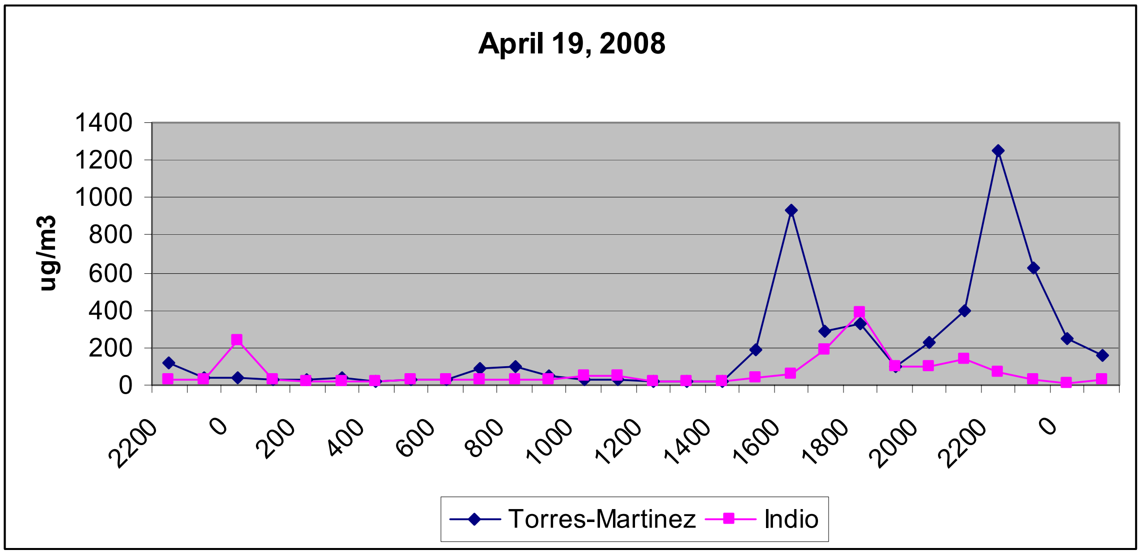
2000
2200
0
Torres-Martinez
Indio


April 19, 2008
ug/m3
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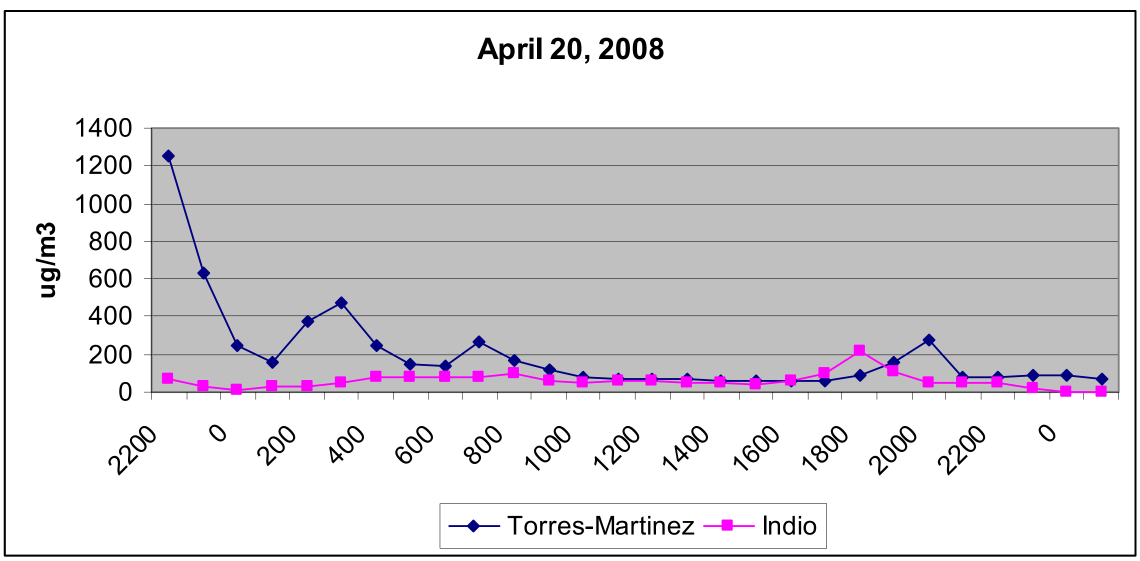
1000
800
600
400
200
0
2200
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
0
Torres-Martinez
Indio


April 20, 2008
ug/m3
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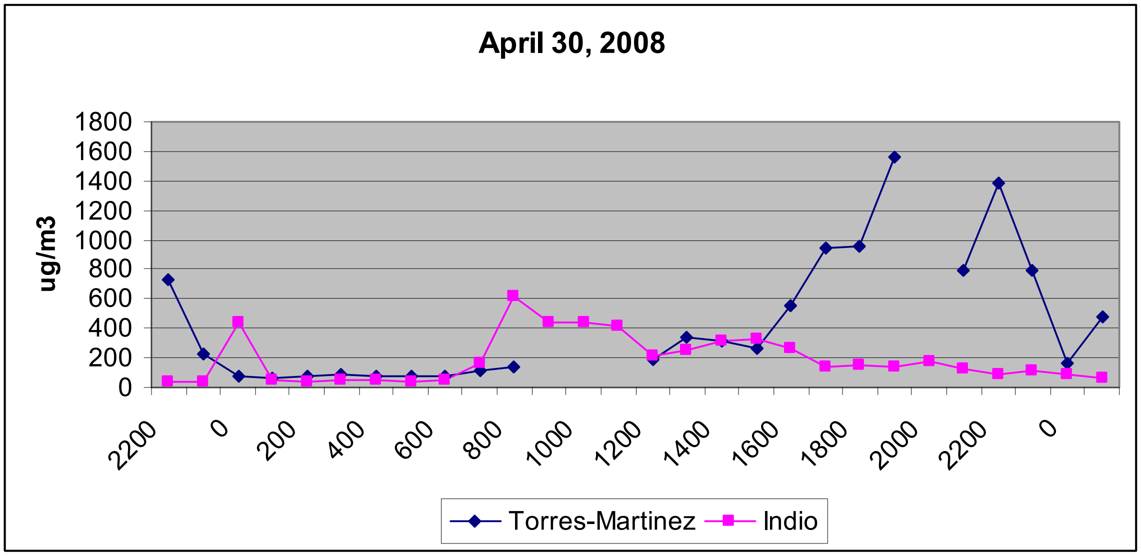
Torres-Martinez
Indio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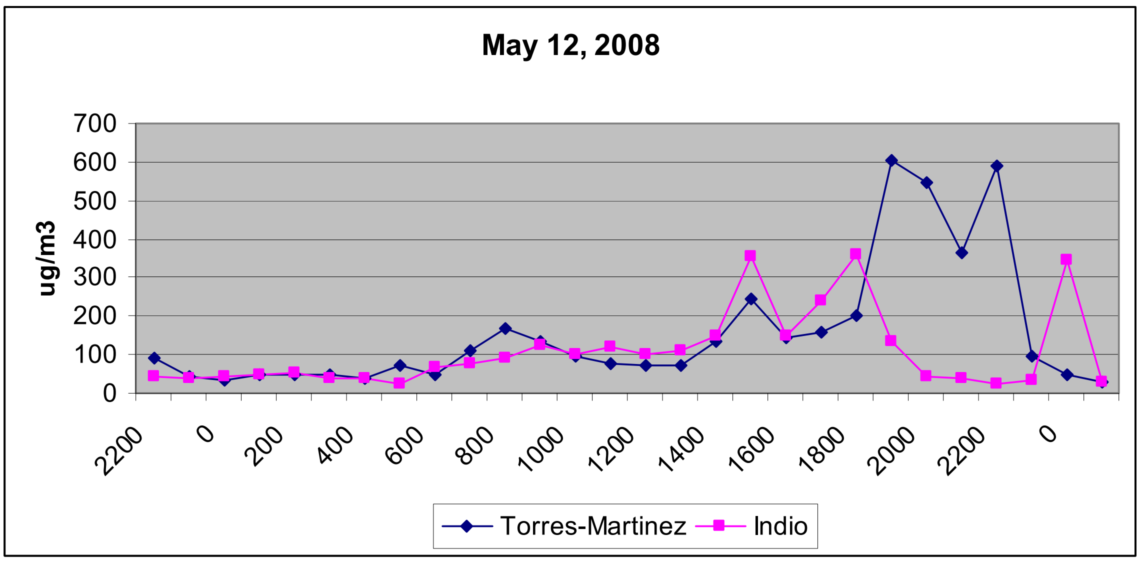
Torres-Martinez
Indio


May 12, 2008
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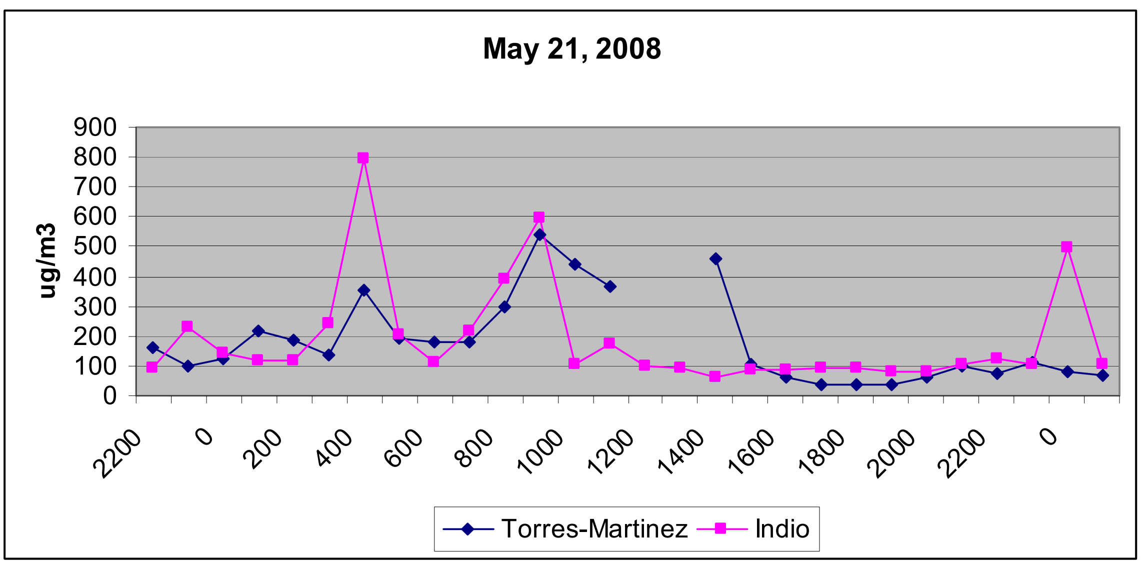
Torres-Martinez
Indio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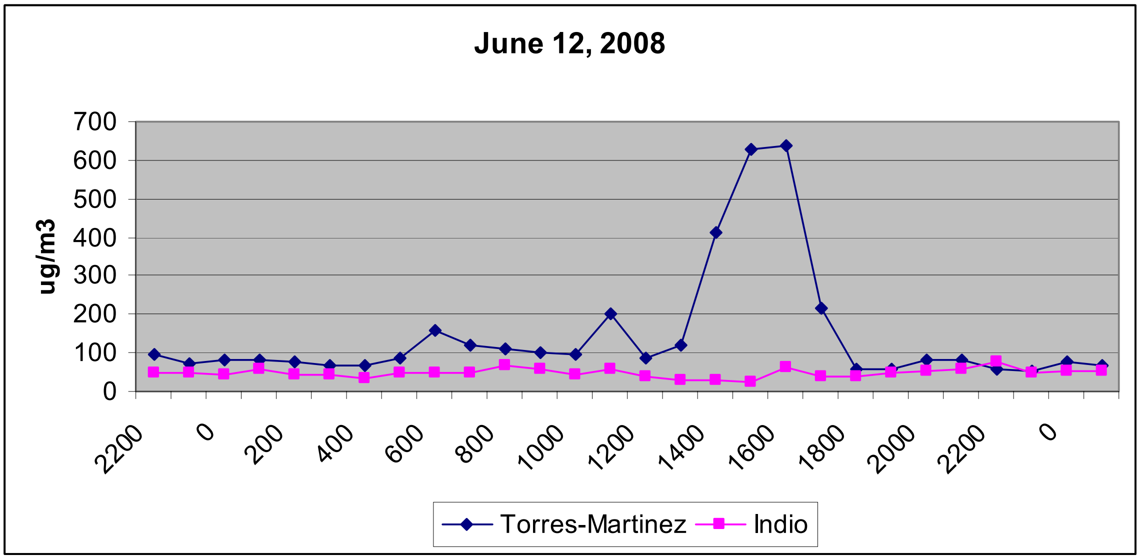
Torres-Martinez
Indio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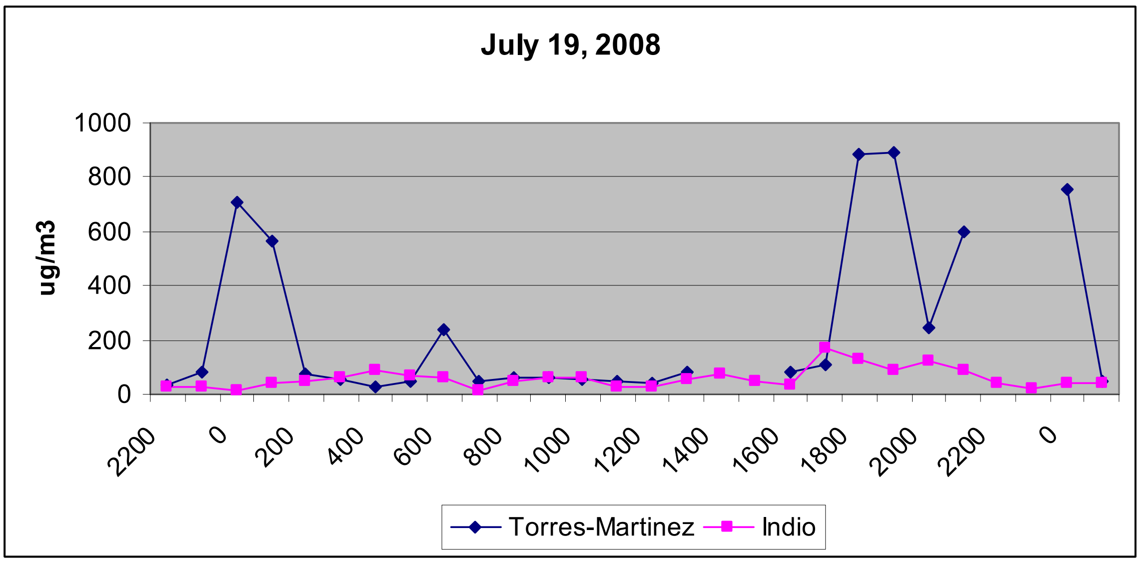
Torres-Martinez
Indio


July 19, 2008
ug/m3
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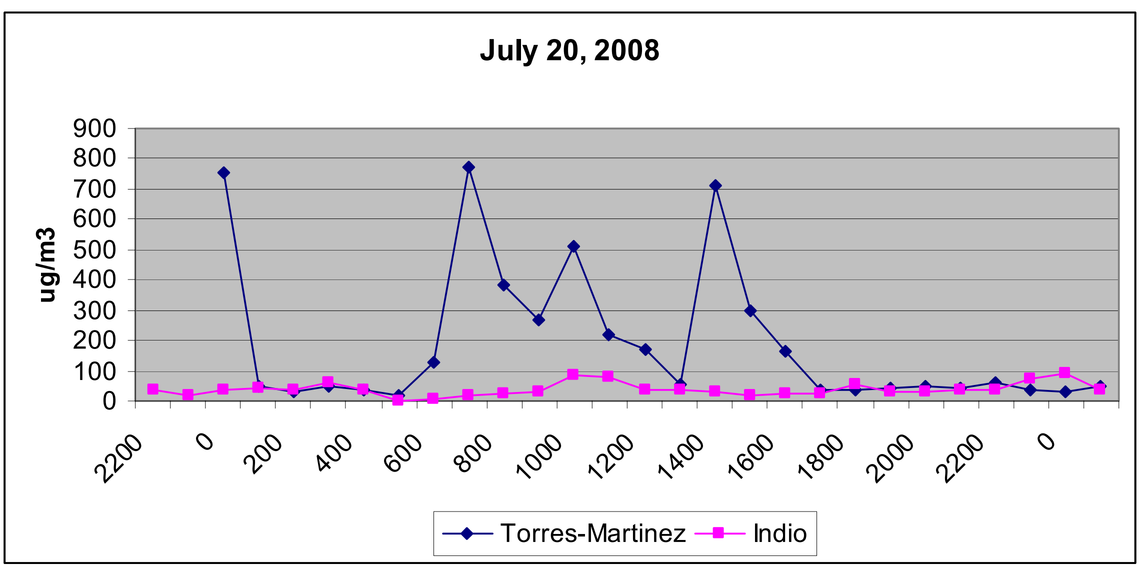
Torres-Martinez
Indio


July 20, 2008
ug/m3
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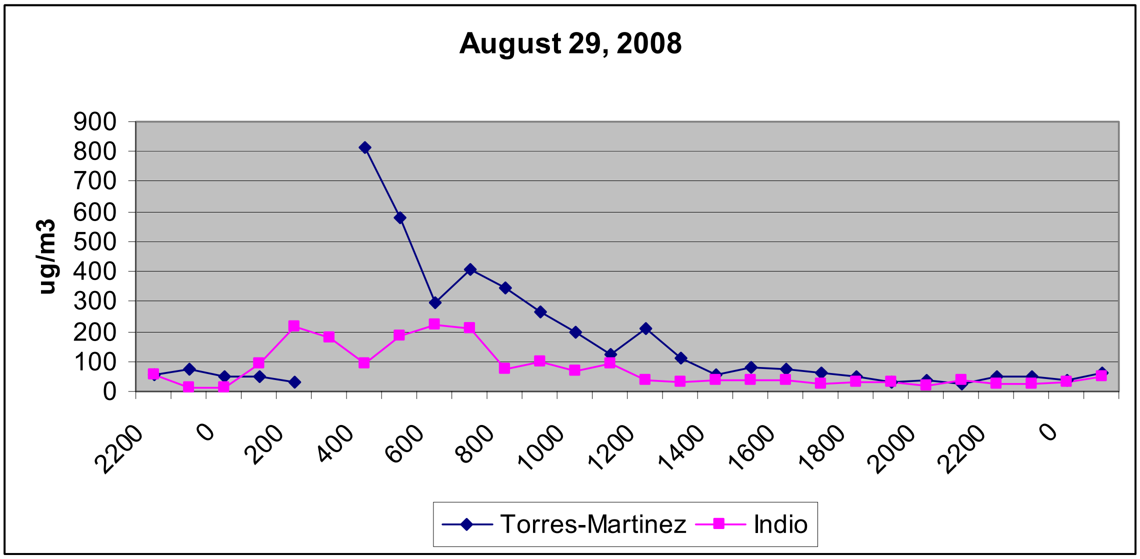
Torres-Martinez
Indio


August 29, 2008
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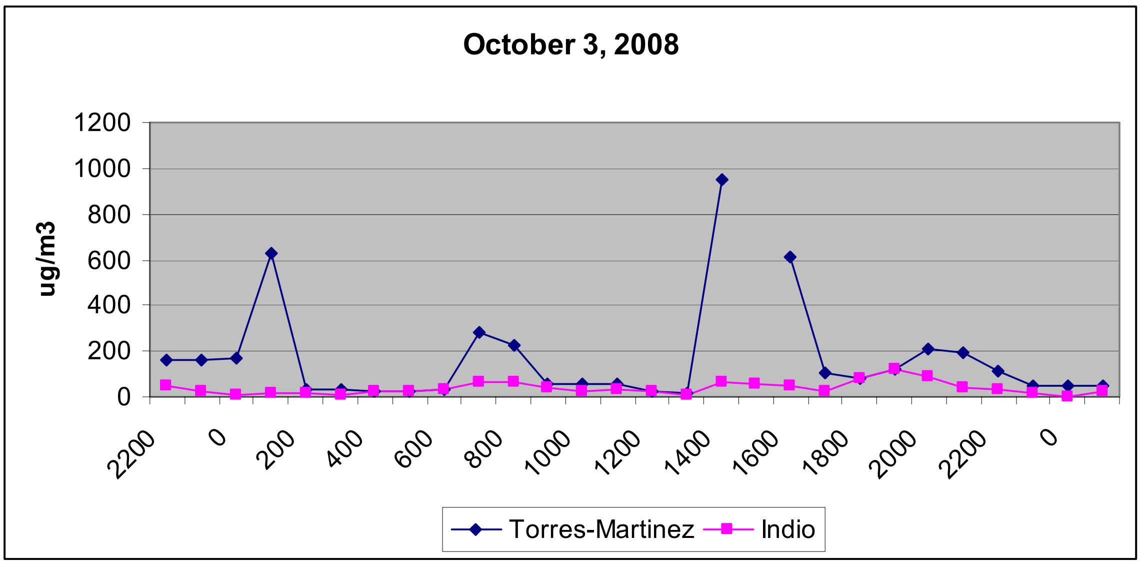
Torres-Martinez
Indio


October 3, 2008
ug/m3
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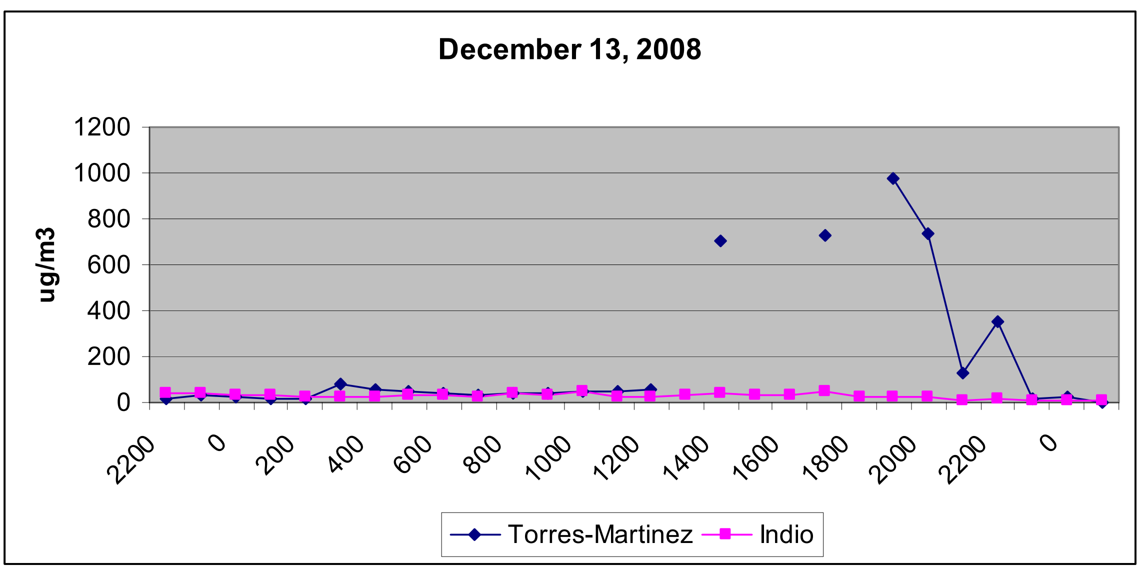
Torres-Martinez
Indio


December 13, 2008
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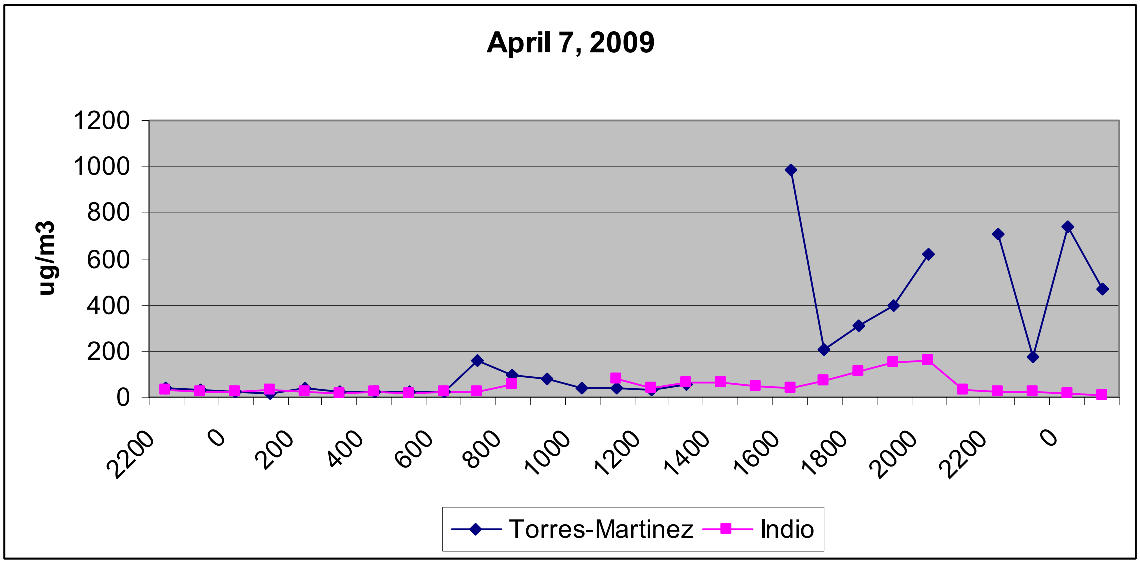
Torres-Martinez
Indio


April 7, 2009
ug/m3
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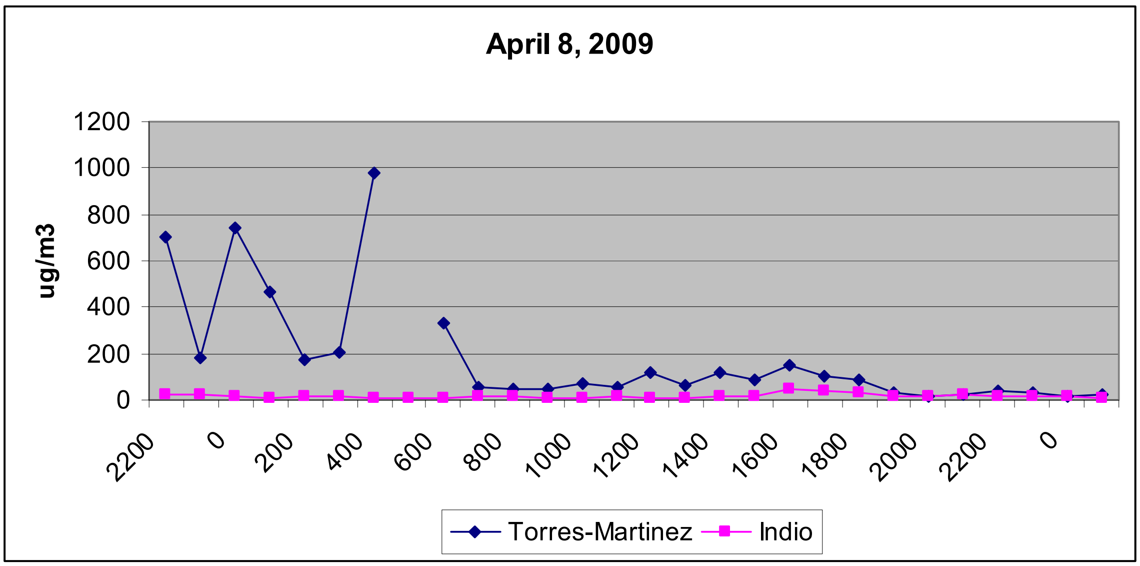
Torres-Martinez
Indio


April 8, 2009
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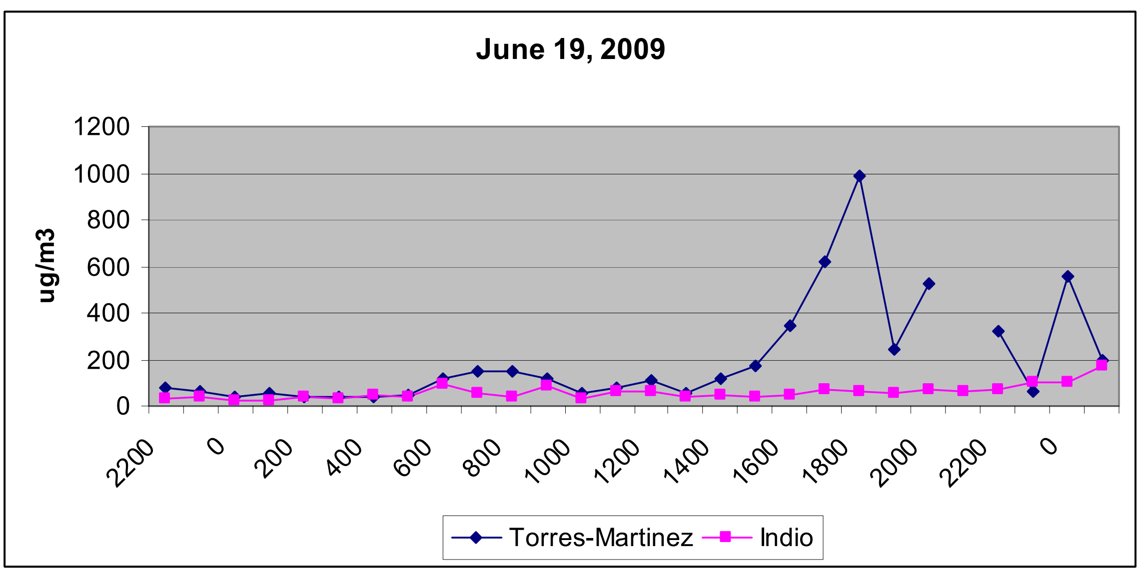
Torres-Martinez
Indio


June 19, 2009
ug/m3
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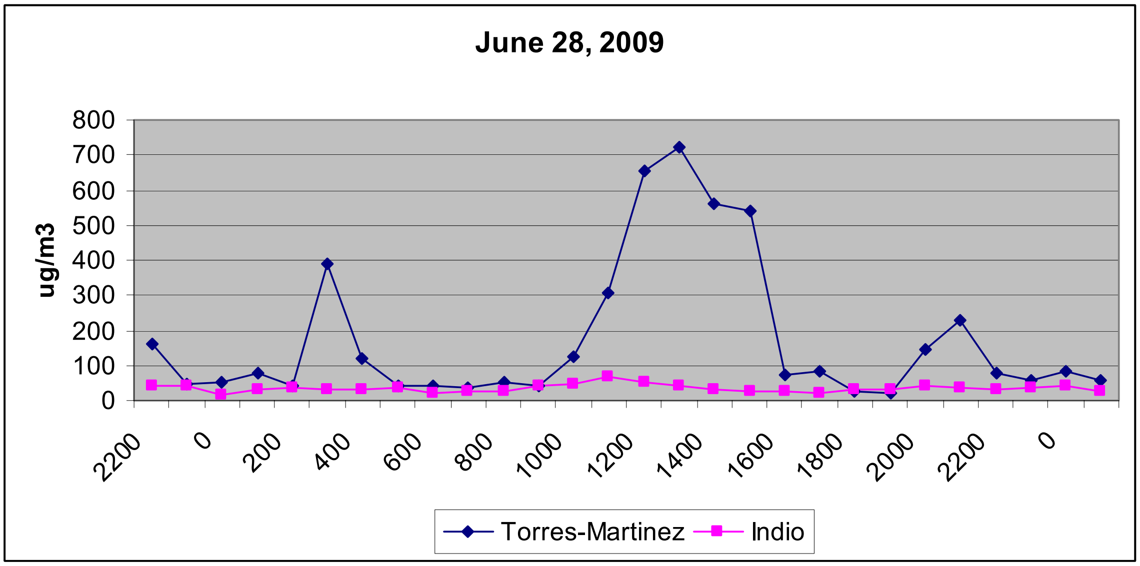
Torres-Martinez
Indio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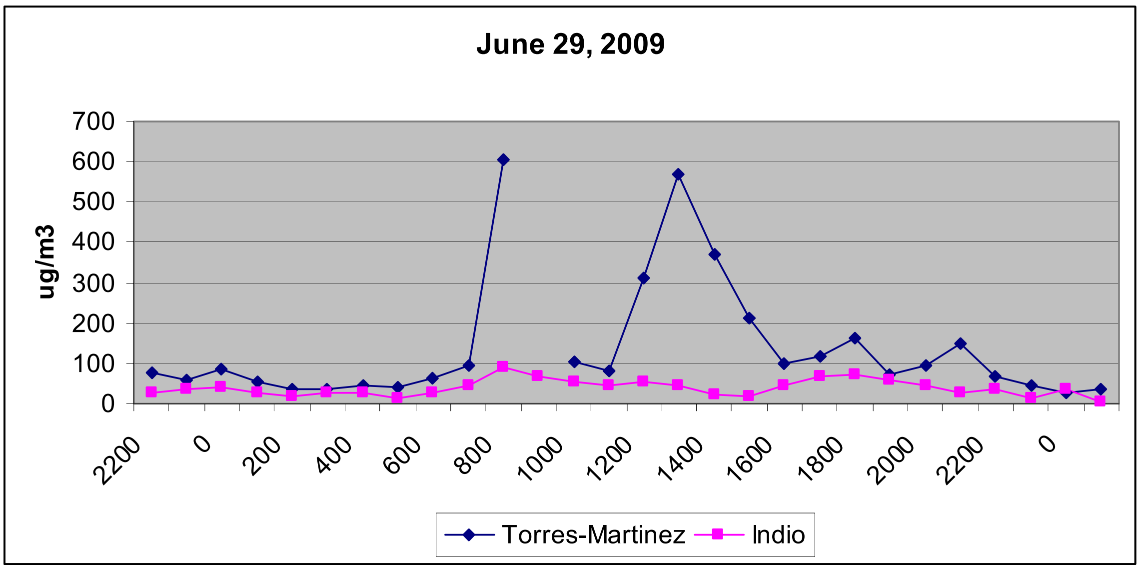
Torres-Martinez
Indio


June 29, 2009
700
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ug/m3
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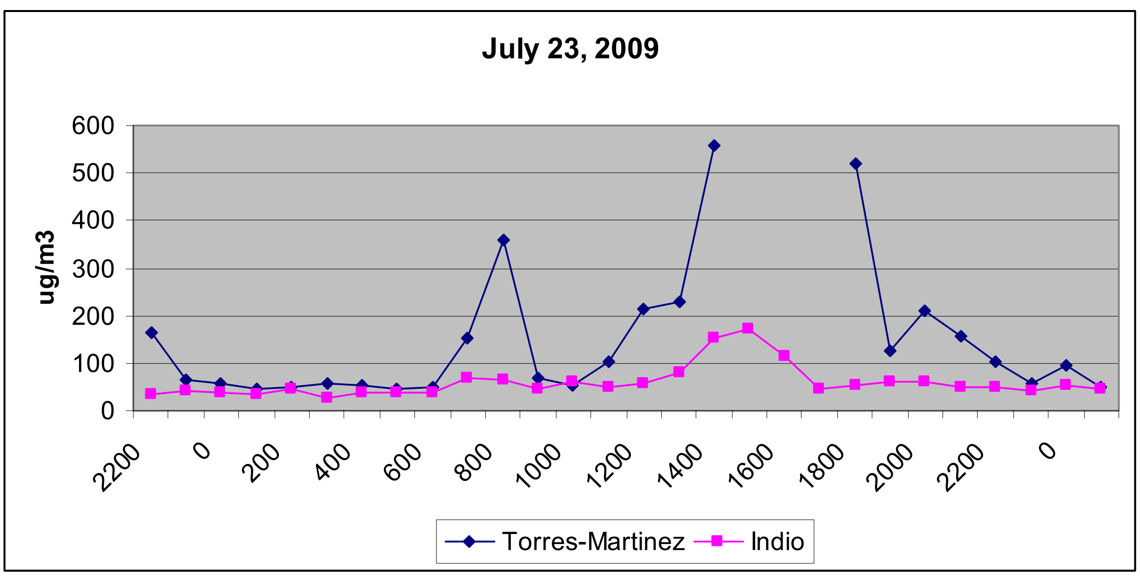
Torres-Martinez
Indio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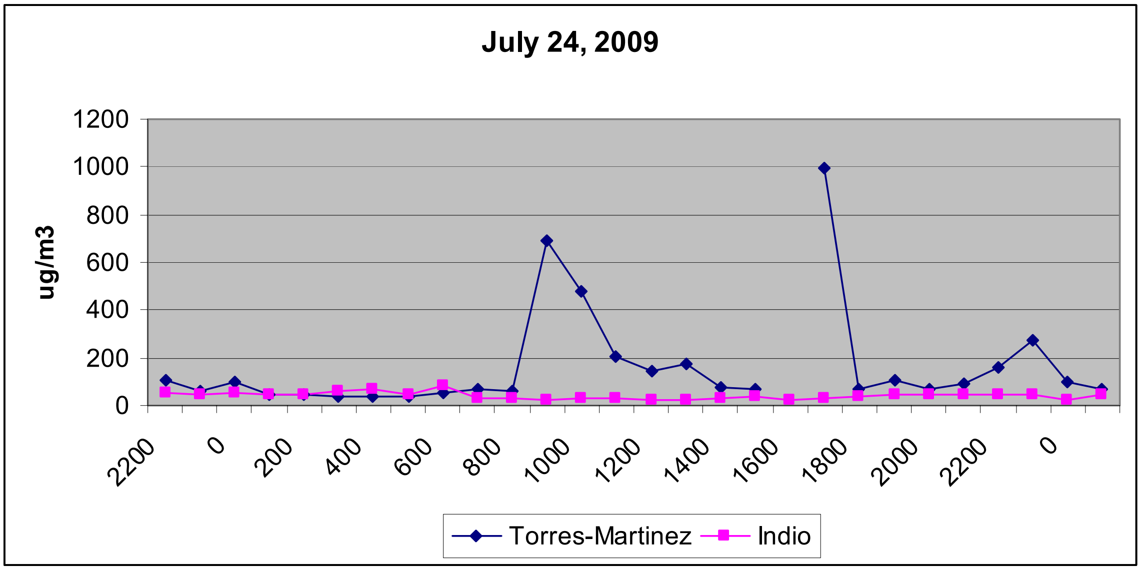
Torres-Martinez
Indio


July 24, 2009
ug/m3
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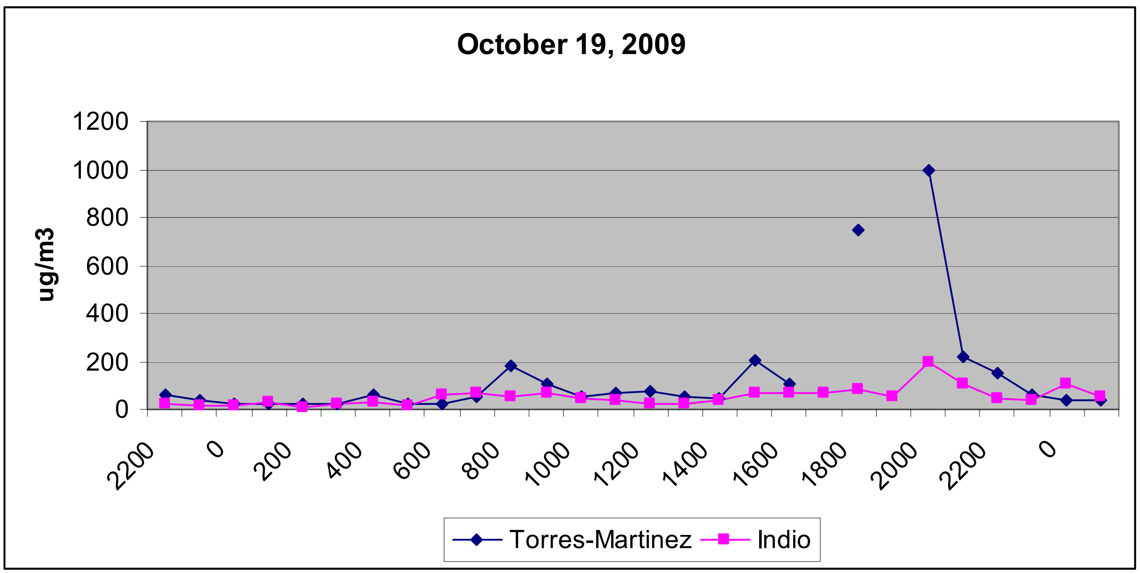
Torres-Martinez
Indio


October 19, 2009
ug/m3
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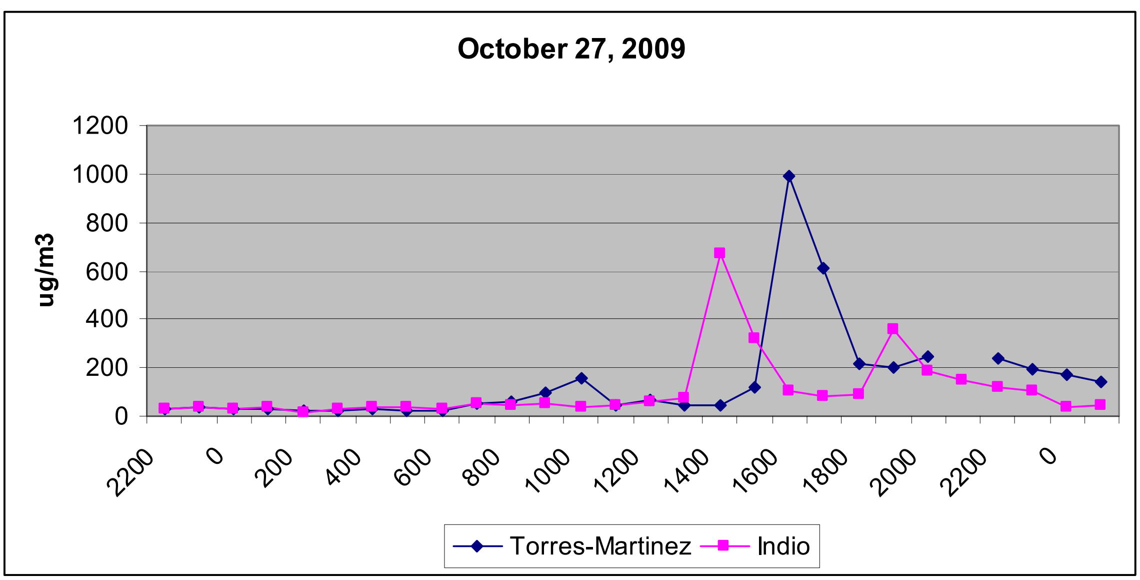
Torres-Martinez
Indio


October 27, 2009
ug/m3
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Torres-Martinez
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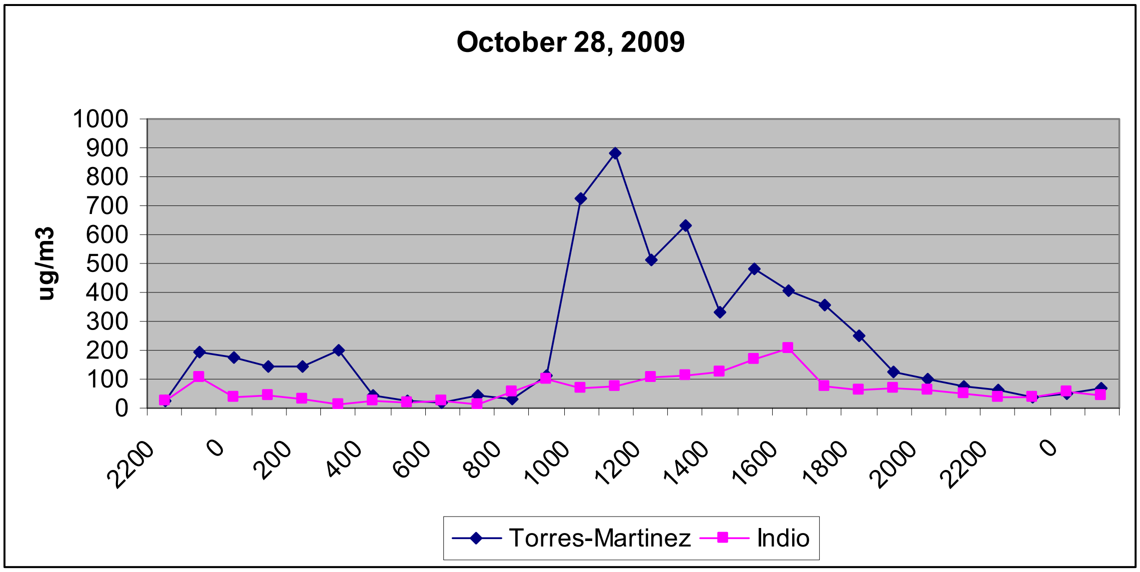
October 28, 2009
ug/m3
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Torres-Martinez
Indio